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ABSTRACT

This book of supplemental exercises is one of a series of books designed to provide educational materials for students in addition to the instructional texts in the Adult Learning Skills Program. Exercises in this basic level book are for the mathematics subject area. Course numbers and exercise topics are: 301 (vocabulary and reading in math, number names, place value), 302 (addition and subtraction, money), 303 (checking addition and subtraction, multiplication, solving problems, number patterns, powers of 10, word problems), 304 (time multiplication, money, word problems), 305 (division, multiplication and division--facts, tables and charts), 306 (division, word problems, fractional parts, multiples of 10), 401 (division, word problems, vocabulary, rounding numbers), 402 (time and measurement, division), 403 (division; time; liquids, weights, and distance measurement), 404 (averaging, time and measurement, estimation), 405 (bank accounts, graphs), and 406 (tables and charts, schedules, measuring length). (YLB)

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MATHEMATICS

Basic Supplemental Exercises

Courses 301 – 406

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ADULT LEARNING SKILLS PROGRAM

Supplemental Exercises

in

MATHEMATICS

Courses 301-406

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TABLE OF CONTENTS

COURSE 301

Vocabulary and Reading in Math . . . . . 1 - 8

Number Names . . . . . 9 - 12

Place Value . . . . . 13 - 18

COURSE 302

Addition and Subtraction . . . . . 19 - 33

Money . . . . . 34 - 37

COURSE 303

Addition and Subtraction (checking) . . . . . 38 - 41

Multiplication . . . . . 42 - 54

Solving Problems . . . . . 55 - 56

Number Patterns . . . . . 57 - 62

Powers of Ten . . . . . 63 - 64

Word Problems . . . . . 65 - 68

COURSE 304

Time . . . . . 69 - 72

Multiplication . . . . . 73 - 85

Money . . . . . 86 - 87

Word Problems 88

COURSE 305

Division . . . . . 89 - 91

Multiplication and Division (facts) . . . . . 92 - 101

Tables and Charts. . . . . 102 - 103

COURSE 306

Division . . . . . 104 - 108

Word Problems . . . . . 109 - 112

Fractional Parts . . . . . 113 - 116

Multiples of 10 . . . . . 117 - 118

Division . . . . . 119 - 123

Word Problems 124

COURSE 401

Division . . . . . 125 - 127

Word Problems . . . . . 128 - 129

Vocabulary . . . . . 130 - 134

Rounding Numbers . . . . . 135 - 139

COURSE 402

Time and Measurement . . . . . 140 - 149

Division . . . . . 150 - 155

COURSE 403

Division . . . . . 156 - 158

Time . . . . . 159 - 161

Measurement (liquids, weights, and distance) . . . . . 162 - 167

Word Problems . . . . . 168 - 170

COURSE 404

Averaging . . . . . 171 - 173

Time and Measurement . . . . . 174 - 179

Word Problems . . . . . 180 - 187

Estimation . . . . . 188 - 190

COURSE 405

Bank Accounts . . . . . 191 - 202

Graphs . . . . . 203 - 210

COURSE 406

Word Problems . . . . . 211 - 217

Tables and Charts . . . . . 218 - 222

Schedules . . . . . 223 - 225

Measuring Length . . . . . 226 - 231

OBJECTIVE: To recognize and use vocabulary related to whole numbers

VOCABULARY AND WHOLE NUMBERS

Certain words are used to talk about whole numbers. Here is a list of these words.

1. **counting numbers:** The numbers we use to count with. These numbers are: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, ...

2. **difference:** This is the answer to a subtraction problem.

$$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array} \leftarrow \text{difference}$$

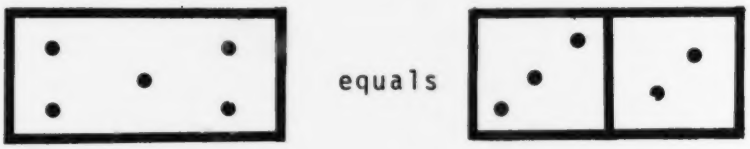
3. **digit:** Ten numbers, or symbols, to write numbers. They are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. All other numbers are made from these ten digits.

7 ← a 1 digit number

49 ← a 2 digit number

563 ← a 3 digit number and so on

4. **equal, equals, equal to:** These words mean is <u>the same as</u>. Use an equal sign (=) to show same as.



5 = 3 + 2

5. **even number:** Multiply any number by 2. This will give you an <u>even</u> number.

	1	2	3	4	5	6	7	8	9
2 x	2	4	6	8	10	12	14	16	18

The numbers in the boxes are even numbers. Even numbers can be large or small. They form a pattern which can go on and on.

6. factor: One of the numbers in a multiplication problem. In 2 x 3 = 6, 2 and 3 are the factors.

7. greater than: We can compare numbers. One may be higher in value. One may be larger in amount. Use the symbol > . It is read "is greater than."

$1.00 > 50¢

59 > 40

DIRECTIONS: Fill in the blanks using words, symbols, or numbers.

SOME WORDS AND SYMBOLS YOU SHOULD KNOW

counting numbers	even numbers
difference	factor
equals	greater than
digits	>

1. The numbers 8, 10, 12, and 14 are _____.

2. The difference of 9 and 7 is _____.

3. Seven plus twelve _____ nineteen.

4. The symbol for greater than is _____.

5. In the number 438, 4, 3, and 8 are _____.

6. The _____ are 1, 2, 3, 4 and so on.

7. An even number always has 2 as a _____.

10

8. What is the smallest two-digit number you can write? _____

9. Write 17 > 12 in words. _____

10. The _____ between 6 and 2 is 4.

11. In the problem 16x3=48, 16 and 3 are _____ of 48.

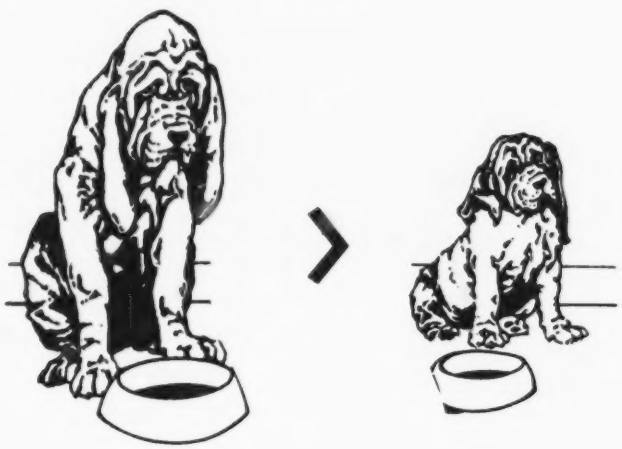
12. Fourteen is both a _____ and an _____.

13. Rewrite seventeen minus thirteen equals four in numbers and symbols.

_____

14. 25+31 _____ 52.

15. Are 7 and 6 factors of 43? _____



OBJECTIVE: To recognize and use vocabulary related to whole numbers

PART I

MORE VOCABULARY

1. less than:

Numbers can be compared to see if one is lower. One can be lower in value. One can be smaller in amount. Use the symbol $<$ It is read "is less than."

$\$1.00 < \$2.00$

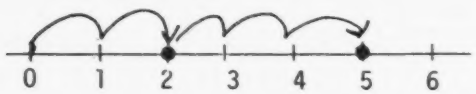
$59 < 84$

2. number line:

This is a set of points on a line. Each point has a number. Number lines show how numbers work.

$2 + 3 = 5$

Count to 2. Then count 3 more to 5.



3. number sentence:

An English sentence starts with a capital letter. The sentence ends with a period. It has a subject, a verb and maybe some other words:

EXAMPLE: We painted the house.

A number sentence has numbers in it. It also has a verb.

Here are some verbs we use in mathematics:

$=$ means is equal to or equals

$<$ means is less than

$>$ means is greater than

Here is how we use them in number sentences:

$5 \times 3 = 15$

$\$7.00 + \$3.50 = \$10.50$

$7 > 3$

$5 + 6 < 6 + 6$

4. odd number: Any number that is <u>not</u> equal to 2 times (x) another is <u>odd.</u> The odd numbers are: 1, 3, 5, 7, 9, 11, 13, 15....

   Odd numbers can be large or small. They form a pattern which can go on and on.

5. operation: Something done to a number or numbers.

   The <u>four</u> basic operations are:

addition	(+)
subtraction	(-)
multiplication	(x)
division	(÷)

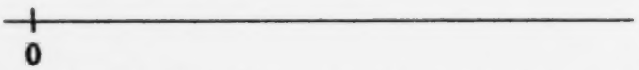
DIRECTIONS: Answer the questions below using words, symbols, or numbers.

SOME WORDS AND SYMBOLS YOU SHOULD KNOW	
less than	<
number line	
number sentence	+
odd number	-
operation	x
division	÷

1. Something done to a number or numbers is an _____.

2. The symbols for the four basic operations are _____, _____, _____ and _____.

3. Label this number line showing 0 to 10.



4. Use the number line above to show 2 + 3 = 5.

5. An _____ is <u>not</u> equal to 2 times another number.

6. Make a number sentence out of these numbers and symbols.

155 72 83 - =

_____

7. Write this number sentence in words.

$32 < 47$

_____

8. Can a number be odd and even at the same time? _____

9. Write this number sentence in numbers and symbols.

six plus five is less than twelve

_____

10. Make a number sentence out of these numbers and symbols.

x 87 2 66 53 + <

_____

<

SEVEN BOOKS

Maria and Sue together have 7 books. What can you say?

PART II

A. DIRECTIONS: Write T or F in the blanks.

	T or F
1) Each may have the same number of books as the other.	_____
2) If one has an even number of books then the other has an odd number of books.	_____
3) One may have exactly twice as many as the other.	_____
4) One has more books than the other.	_____

B. DIRECTIONS: Fill in the blanks.

1) If Maria has 2 books then Sue has _____ books.

2) If one has an even number of books then the other has an _____ number of books.

3) If Sue has exactly 3 more than Maria, then Sue has _____ books, and Maria has _____ books.

C. DIRECTIONS: There are only 8 ways the books might be shared. Fill out the table below.

If Maria has	7	6	5	4	3	2	1	0
Then Sue has								

CHECK YOUR ANSWERS TO PARTS A AND B ABOVE, USING YOUR TABLE.

OBJECTIVE: To recognize and use vocabulary related to whole numbers

MORE VOCABULARY

1. **whole numbers:** These are 0 and the numbers used for counting. They are 0, 1, 2, 3, 4 . . . and so on.

2. **sum:** The sum is the answer to an addition problem. In word problems we may ask "What is the sum?"

$$\begin{array}{r} 121 \\ +\ 252 \\ \hline 373 \end{array} \blacktriangleleft \textbf{sum}$$

3. **total:** Total can mean the same as sum. It can mean the answer to an addition problem. Total can also mean the whole amount.

$$\begin{array}{r} 531 \\ +\ 412 \\ \hline 943 \end{array} \blacktriangleleft \textbf{total}$$

4. **rename:** A number can have many names. Fourteen can be 14 or 10 + 4. Either way we are saying 1 ten and 4 ones.

For example: When we rename in addition, we form new groupings for our numbers. When we form new groupings, we change the name of our numbers.

$$\begin{array}{r} {\scriptstyle 1} \\ 59 \\ +\ 43 \\ \hline 2 \end{array}$$ (9 + 3 = 12 or 1 ten and 2 ones)

$$\begin{array}{r} {\scriptstyle 1} \\ 59 \\ +\ 43 \\ \hline 102 \end{array}$$ (1 + 5 + 4 = 10 tens)
(10 tens = 100)
(the answer reads one hundred two)

5. **product:** The answer to a multiplication problem is the product.

$$\begin{array}{r} 4 \blacktriangleleft \textbf{factor} \\ \times\ 2 \blacktriangleleft \textbf{factor} \\ \hline 8 \blacktriangleleft \textbf{product} \end{array}$$

OBJECTIVE: To recognize and write names of numbers

Names of Numbers

We need to know the names of numbers. There are some patterns that make them easier to learn. Look for them!

PART I

A. DIRECTIONS: Read the numbers.

one	1	eleven	11
two	2	twelve	12
three	3	thir<u>teen</u>	13
four	4	four<u>teen</u>	14
five	5	fif<u>teen</u>	15
six	6	six<u>teen</u>	16
seven	7	seven<u>teen</u>	17
eight	8	eigh<u>teen</u>	18
nine	9	nine<u>teen</u>	19
ten	10		

<u>teen</u>
means
<u>and ten</u>
so
fourteen
means
four and ten

B. DIRECTIONS: Look in the second column above. Start with 13. See which number words changed when <u>teen</u> was added. Write the names below:

Changed when <u>teen</u> was added:		Did NOT change when <u>teen</u> was added:	
thirteen	13	*fourteen*	14

C. DIRECTIONS: Cover up the top of the page and try to write these number names:

9 _____	13 _____	10 _____
5 _____	15 _____	6 _____
7 _____	17 _____	2 _____
3 _____	12 _____	1 _____
11 _____	8 _____	14 _____

PART II

Names of Numbers

There are patterns in these number names too.

A. DIRECTIONS: Read the numbers.

one	1	ten	10
two	2	twenty	20
three	3	thirty	30
four	4	forty	40
five	5	fifty	50
six	6	sixty	60
seven	7	seventy	70
eight	8	eighty	80
nine	9	ninety	90

ty
means
times ten
so
sixty
means
6 times 10
or
6 x ten
or
6 tens

B. DIRECTIONS: Look in the second column above. Start with 20. See which number words changed when ty was added. Write the names below:

Changed when ty was added:		Did NOT change when ty was added:	
twenty	20	*sixty*	60

Did you notice that eight only kept one t when teen or ty was added?

Two more number names

zero = 0 one hundred = 100

NUMBER NAME PRACTICE

PART III

DIRECTIONS: Write the number names without looking back.

0	_____				
1	_____	11	_____		
2	_____	12	_____	20	_____
3	_____	13	_____	30	_____
4	_____	14	_____	40	_____
5	_____	15	_____	50	_____
6	_____	16	_____	60	_____
7	_____	17	_____	70	_____
8	_____	18	_____	80	_____
9	_____	19	_____	90	_____
10	_____			100	_____

PART IV

YOU NAME THEM!

With the number names you know, you can write <u>any</u> number up to 999.

EXAMPLES: 26 = twenty-six 89 = eighty-nine 32 = thirty-two

100 = one hundred 17 = seventeen 43 = forty-three

600 = six hundred 151 = one hundred fifty-one

A. DIRECTIONS: Write the name of each number.

1) 57 _____

2) 8 _____

3) 16 _____

4) 61 _____

5) 0 _____

6) 34 _____

7) 46 _____

8) 20 _____

9) 63 _____

10) 7 _____

11) 180 _____

12) 99 _____

13) 12 _____

14) 75 _____

B. DIRECTIONS: Write the number.

1) fifteen _____

2) twenty-seven _____

3) one hundred _____

4) forty-two _____

5) thirty-four _____

6) one hundred ten _____

7) thirteen _____

8) sixty-five _____

9) twelve _____

10) eighty _____

11) eleven _____

12) three _____

13) zero _____

14) seventeen _____

15) seventy _____

16) fifty-six _____

17) eighteen _____

18) ninety-one _____

OBJECTIVE: To determine place value to millions

PART I

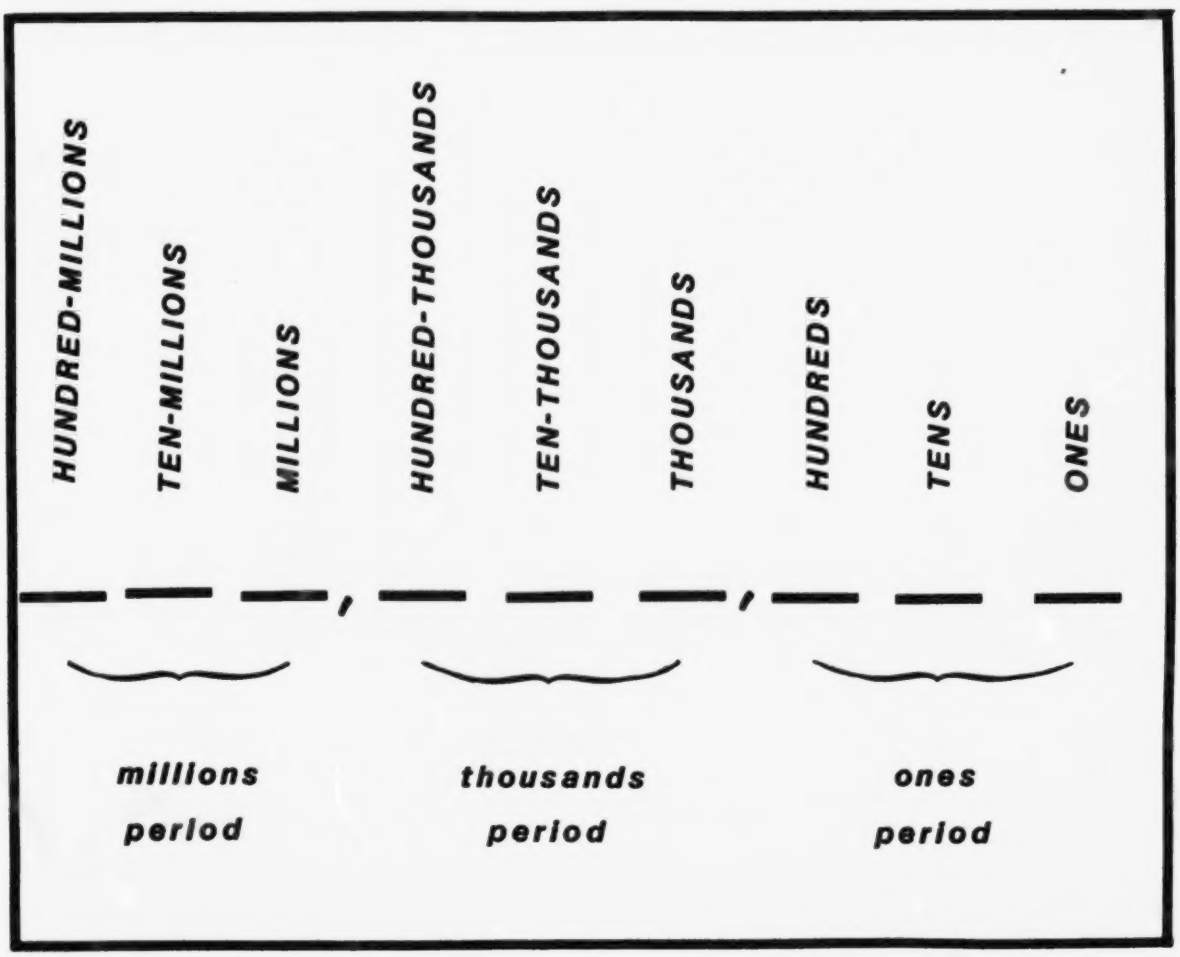
OUR PLACE VALUE SYSTEM

We have a place value system. That means that the place of a digit tells its value.

Which would you rather have: $54 or $45?

Notice the same 2 digits were used--but where they are in the number is very important.

Here are the place values. In reading words we start on the left. But in naming the place values we start on the right, with **ONES**. You must memorize them.

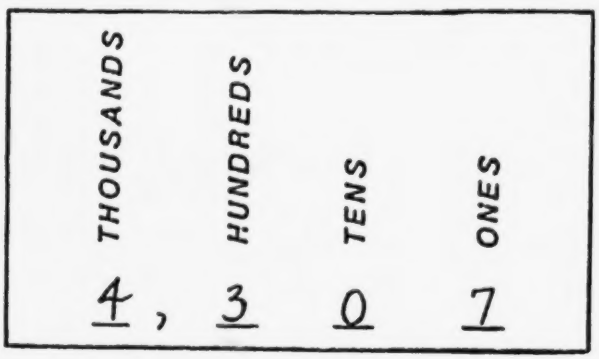


The place values are in groups of three. These groups of three places are called PERIODS. The commas separate them, to make them easier to read. When we get to the comma, we say the period name. (We don't have to say ONES, after the ones period, however.)

EXAMPLE 1:

4,307

We write each digit in its place value, starting with the ones place. After the digits are filled in, we read the number from the left.



Say: "Four thousand, three hundred seven."

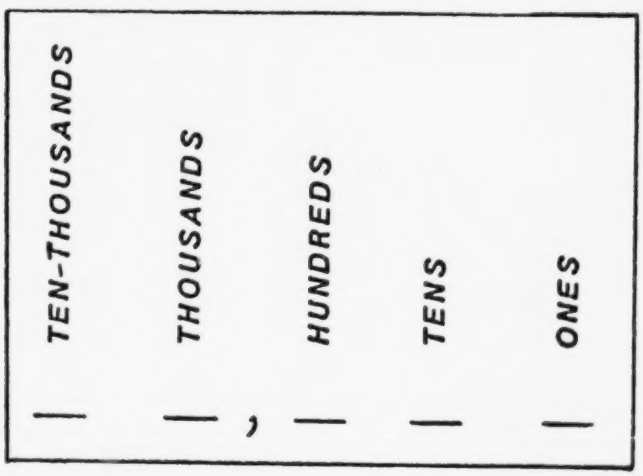
EXAMPLE 2:

a) 21,075

Write each digit in its place in the chart. Start with the ones place.

b) Now read aloud:

"Twenty-one thousand, seventy-five."



Period	Place values
ones	ones, tens, hundreds
thousands	thousands, ten-thousands, hundred-thousands
millions	millions, ten-millions, hundred-millions

READING NUMBERS

The meaning of numbers:

2, 6 7 4 means:

4 ones	or 4 x	1 =	4
7 tens	or 7 x	10 =	70
6 hundreds	or 6 x	100 =	600
2 thousands	or 2 x	1,000 =	2000
If we add them all up, we get			2674

PART II

DIRECTIONS: Fill in the chart. Then write the numbers in words. The first one has been done.

		MILLIONS	HUNDRED-THOUSANDS	TEN-THOUSANDS	THOUSANDS	HUNDREDS	TENS	ONES	
1)	73,100	___,	___	7	3,	1	0	0	*Seventy-three thousand, one hundred*
2)	1,405,893	___,	___	___	___,	___	___	___	
3)	625	___,	___	___	___,	___	___	___	
4)	82,129	___,	___	___	___,	___	___	___	
5)	236,701	___,	___	___	___,	___	___	___	
6)	60,060	___,	___	___	___,	___	___	___	

PART III

DIRECTIONS: Fill in the place value for each number. The first one has been done for you.

	MILLIONS	HUNDRED-THOUSANDS	TEN-THOUSANDS	THOUSANDS	HUNDREDS	TENS	ONES
1) 674,300		6	7	4,	3	0	0
2) 5,832							
3) 140,697							
4) 9,086,451							
5) 627							
6) 732,006							
7) 4,562,101							
8) 8							
9) 44,343							
10) 6,000,403							
11) 8,139							
12) 89							
13) 724,563							
14) 81,974							
15) 6,982							

MORE READING NUMBERS

6,524,307 means: (Starting on the right)

7 ones, or 7 x 1	=	7
0 tens, or 0 x 10	=	0
3 hundreds, or 3 x 100	=	300
4 thousands, or 4 x 1,000	=	4,000
2 ten-thousands, or 2 x 10,000	=	20,000
5 hundred-thousands, or 5 x 100,000	=	500,000
6 millions, or 6 x 1,000,000	=	6,000,000
In all, this number adds up to		6,524,307

To READ this number aloud, we say:

"Six million, five hundred twenty-four thousand, three hundred seven."

PART IV

DIRECTIONS: Read the following numbers aloud. Then write them in words.

1. 476,330 _____
2. 1,372,437 _____
3. 9,624 _____
4. 8,115,089 _____
5. 426 _____
6. 17,101 _____
7. 14,009 _____
8. 2,978,152 _____
9. 55,671 _____
10. 793,588 _____

PART V

DIRECTIONS: Write the place value for the digit that is underlined. Then tell how much that digit is worth.

EXAMPLES: A) 5,654,389 — 5 million
5x1,000,000 or 5,000,000 or 5 million

B) 7,167,213 — 1 hundred-thousand
1x100,000 or 100,000 or
1 hundred-thousand

1) 7,653,403 _____
2) 71 _____
3) 6,804 _____
4) 1,000,000 _____
5) 465,868 _____
6) 332 _____
7) 3,647 _____
8) 901 _____
9) 9,845 _____
10) 32,453 _____
11) 687 _____
12) 9,001,701 _____
13) 34 _____
14) 367,542 _____
15) 531 _____
16) 8,542,124 _____
17) 4,586 _____
18) 166 _____
19) 2,600,301 _____
20) 73 _____
21) 3,674,075 _____
22) 2,107 _____
23) 146,016 _____
24) 411 _____
25) 9,999 _____
26) 3,317 _____
27) 688 _____
28) 3,444 _____
29) 45,345 _____
30) 531 _____

OBJECTIVE: To find sums with renaming

RENAMING FOR ADDITION

```
  569   addend
+ 492   addend
  ---
    ?   sum (total)
```

Add the ones column: 9+2=11. Write (1) in the ones place and carry the (1) to the tens column.

Add the tens columns: 6+9=15. Plus the (1) that was carried equals 16. Write (6) in the tens place and carry the (1) to the hundreds column.

Add the hundreds columns: 5+4=9. Plus the (1) that was carried equals 10. Write (10).

```
  1          11          11
 569        569         569
+492       +492        +492
 ---        ---        ----
   1         61       1,061
```

PART I

DIRECTIONS: Solve the following exercise.

1) 43 + 8	2) 33 + 9	3) 79 + 2	4) 56 + 7	5) 99 + 1
6) 36 + 58	7) 48 + 63	8) 97 + 35	9) 67 + 44	10) 84 + 89
11) 187 + 5	12) 261 + 9	13) 778 + 32	14) 566 + 45	15) 156 + 39
16) 660 + 845	17) 203 + 517	18) 444 + 671	19) 148 + 308	20) 916 + 394

PART II

DIRECTIONS: Solve each problem. Match your answer to one from the box on the right.

EXAMPLES:

1)	2)	(3)	(4)
92	512	650	5,346
74	387	981	1,887
+ 66	+ 957	446	+ 2,220
(c) 232	(a) 1,856	+ 754	(b) 9,453
		(d) 2,831	

a) 1,856
b) 9,453
c) 232
d) 2,831

1)	2)	3)	4)
36	85	56	475
41	40	11	633
+ 53	+ 67	+ 98	+ 964

a) 165
b) 130
c) 2,072
d) 192

5)	6)	7)	8)
97	43	483	631
53	51	528	157
60	86	609	774
+ 48	+ 93	+ 883	+ 458

a) 2,020
b) 2,503
c) 273
d) 258

9)	10)	11)	12)
891	567	9,993	4,630
356	151	1,286	9,871
700	934	+ 1,372	+ 2,239
+ 333	+ 610		

a) 2,280
b) 12,651
c) 16,740
d) 2,262

PART III

DIRECTIONS: Add the following.

EXAMPLE:

5,678	5,678
206	206
+ 7,459	+ 7,459
?	13,343

1) 4,678 + 7	2) 2,495 + 29	3) 6,304 + 5	4) 8,764 + 939
5) 7,546 + 9	6) 9,057 + 84	7) 5,764 + 6,958	8) 3,526 + 609
9) 10,097 + 96	10) 22,488 + 84,242	11) 90,678 + 801	12) 67,556 + 9,820
13) 7,576 9,506 455 + 3,876	14) 1,809 4,390 214 + 74	15) 400 9,289 93 + 2,898	16) 9,540 98 659 + 7,943

PART IV

DIRECTIONS: Add the following.

EXAMPLE: 9,678 + 822 = ?

$$\begin{array}{r} 9{,}678 \\ +\ \ 822 \\ \hline 10{,}500 \end{array}$$

9,678 + 822 = 10,500

1) 8,671 + 409 =	2) 5,375 + 967 =	3) 7,527 + 6,834 =
4) 34,670 + 9,736 =	5) 18,907 + 595 =	6) 47,439 + 8,959 =
7) 53,874 + 7 =	8) 75,674 + 23 =	9) 7,176 + 294 =
10) 9,187 + 87,835 =	11) 373,942 + 58 =	12) 353 + 37 + 5 + 37 =
13) 83 + 19 + 47 + 356 =	14) 4,376 + 8 + 19 =	15) 5 + 350 + 49 =

PART I

SUBTRACTION WITH RENAMING

Suppose they didn't make $20 bills, or $50 bills, or $5 bills, or $2 bills.

Suppose all we had were $1 bills, $10 bills, $100 bills, $1,000 bills and so on. How would we make change?

EXAMPLE: $25 could be 2 tens and 5 ones

or 1 ten and 15 ones

or 0 tens and 25 ones.

DIRECTIONS: Fill in the blanks:

$17 could be: ____ tens and ____ ones

or ____ tens and ____ ones

$32 could be: ____ tens and ____ ones

or ____ tens and ____ ones

or ____ tens and ____ ones

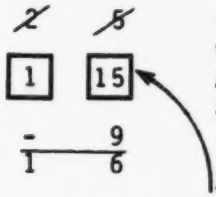
or ____ tens and ____ ones

Suppose you had $25 and wanted to pay $9 for something.

Could you do it with 2 $10 bills and 5 $1 bills? No

Could you do it with 1 $10 bill and 15 $1 bills? ____
How many $1 bills would you have left? ____
How many $10 bills would you have left? ____

You have just done a subtraction problem.



Some people say we "borrowed" a ten. Actually we "changed" a ten for 10 ones.

Subtract from the numbers in the boxes.

PART II

A. DIRECTIONS: Try these subtraction problems. First, borrow and make change if needed, and write the new numbers in the boxes. Then subtract from the numbers in the boxes. The first one has been done for you.

1)
$$\begin{array}{r} \cancel{3}\ \ \cancel{2} \\ \boxed{2}\ \ \boxed{12} \\ -\ 1\ \ \ 8 \\ \hline 1\ \ \ 4 \end{array}$$

2)
$$\begin{array}{r} 4\ \ 3 \\ \square\ \ \square \\ -\ 2\ \ 7 \\ \hline \end{array}$$

3)
$$\begin{array}{r} 5\ \ 1 \\ \square\ \ \square \\ -\ 1\ \ 3 \\ \hline \end{array}$$

4)
$$\begin{array}{r} 7\ \ 6 \\ \square\ \ \square \\ -\ 4\ \ 7 \\ \hline \end{array}$$

5)
$$\begin{array}{r} 2\ \ 7 \\ \square\ \ \square \\ -\ \ \ 8 \\ \hline \end{array}$$

Some people think the boxes take up too much room, so they write the "changed" numbers on top. Try doing the same problems this way. The first one has been done for you.

6)
$$\begin{array}{r} \ \ 2\ \ 12 \\ \cancel{3}\ \ \cancel{2} \\ -\ 1\ \ 8 \\ \hline 1\ \ 4 \end{array}$$

7)
$$\begin{array}{r} 4\ \ 3 \\ -\ 2\ \ 7 \\ \hline \end{array}$$

8)
$$\begin{array}{r} 5\ \ 1 \\ -\ 1\ \ 3 \\ \hline \end{array}$$

9)
$$\begin{array}{r} 7\ \ 6 \\ -\ 4\ \ 7 \\ \hline \end{array}$$

10)
$$\begin{array}{r} 2\ \ 7 \\ -\ \ \ 8 \\ \hline \end{array}$$

B. DIRECTIONS: Do these subtraction problems. Use the way you like best.

1) $\begin{array}{r} 58 \\ -\ 9 \\ \hline \end{array}$

2) $\begin{array}{r} 60 \\ -\ 9 \\ \hline \end{array}$

3) $\begin{array}{r} 97 \\ -\ 8 \\ \hline \end{array}$

4) $\begin{array}{r} 44 \\ -\ 6 \\ \hline \end{array}$

5) $\begin{array}{r} 66 \\ -\ 7 \\ \hline \end{array}$

6) $\begin{array}{r} 65 \\ -38 \\ \hline \end{array}$

7) $\begin{array}{r} 53 \\ -14 \\ \hline \end{array}$

8) $\begin{array}{r} 88 \\ -29 \\ \hline \end{array}$

9) $\begin{array}{r} 77 \\ -68 \\ \hline \end{array}$

10) $\begin{array}{r} 52 \\ -45 \\ \hline \end{array}$

PART III

Now let's work with bigger numbers. But still suppose there are no $20 bills, or $50 bills, or $5 bills, or $2 bills. It will be just like our number system.

We have only $1 bills, $10 bills, $100 bills, $1,000 bills and so on. How can we make change?

EXAMPLE: $137 could be 1 hundred and 3 tens and 7 ones

or 0 hundreds and 13 tens and 7 ones

or 0 hundreds and 12 tens and 17 ones

or lots of other ways!

DIRECTIONS: Fill in the blanks. Part of the first one has been done.

1) $247 could be 2 hundreds and 4 tens and 7 ones

or 1 hundred and _____ tens and 7 ones

or 1 hundred and _____ tens and 17 ones

2) $159 could be _____ hundred and _____ tens and _____ ones

or _____ hundred and _____ tens and _____ ones

or _____ hundred and _____ tens and _____ ones

3) $406 could be _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

4) $230 could be _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

5) $281 could be _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

6) $902 could be _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

or _____ hundreds and _____ tens and _____ ones

PART IV

Suppose you had $253 and wanted to pay $87 for something.

First let's see how you could have $253:

$253 could be A. 2 hundreds and 5 tens and 3 ones

or B. 1 hundreds and 15 tens and 3 ones

or C. 1 hundreds and 14 tens and 13 ones

Which one could you use to pay $87--A,B, or C? _____

How would you pay the $87? _____ tens and _____ ones

How much would you have left? _____ hundreds and _____ tens and _____ ones

You have just done this subtraction problem:

We changed a hundred for 10 tens and then we had 15 tens. Then we changed one of the tens for 10 ones (leaving 14 tens) and then we had 13 ones.

~~2~~	~~15~~	~~3~~
1	14	13
-	8	7
1	6	6

or

	14	
1	~~4~~	13
~~2~~	~~5~~	~~3~~
-	8	7
1	6	6

A. **DIRECTIONS:** Try these subtraction problems. First, make change if needed, and write the new numbers in the boxes. The first one has been done.

1)

1	~~3~~	~~2~~
1	2	12
-1	1	6
	1	6

2)

4	3	5
-	2	7

3)

5	6	0
-1	3	6

4)

7	6	2
-	4	7

B. **DIRECTIONS:** Try the same ones without boxes. The first one has been done.

5)

	2	12
1	~~3~~	~~2~~
-1	1	6
	1	6

6)

4	3	5
-	2	7

7)

5	6	0
-1	3	6

8)

7	6	2
-	4	7

PART V

SUBTRACTING WITH MORE THAN ONE RENAMING

In some subtractions, you don't have to make change, or rename.

EXAMPLE 1:

$$\begin{array}{r} 654 \\ -\ 23 \\ \hline 631 \end{array}$$

In some subtractions, you have to make change, or rename.

EXAMPLE 2: $\begin{array}{r} 654 \\ -\ 49 \end{array}$ Can't take 9 from 4. So we rename 54 as 4 tens and 14 ones.

$$\begin{array}{r} 6\ \not{5}\ \not{4} \\ -\ 4\ 9 \\ \hline 6\ 0\ 5 \end{array} \quad \text{or} \quad \begin{array}{r} {\scriptstyle 4\ 14} \\ 6\ \not{5}\ \not{4} \\ -\ 4\ 9 \\ \hline 6\ 0\ 5 \end{array}$$

Sometimes we have to rename more than once.

EXAMPLE 3:

$$\begin{array}{r} 654 \\ -\ 89 \end{array}$$

Step 1: Can't take 9 from 4, so, just as in Example 2, we rename 54 as 4 tens and 14 ones

$$\begin{array}{r} {\scriptstyle 4} \\ 6\ \not{5}\ \not{4} \\ \quad\ \boxed{14} \\ -\ 8\ 9 \end{array} \quad \text{or} \quad \begin{array}{r} {\scriptstyle 4\ 14} \\ 6\ \not{5}\ \not{4} \\ -\ 8\ 9 \end{array}$$

Step 2: We can see that we can't take 8 from 4 in the tens column. So we rename 6 hundreds as 5 hundreds. The 1 hundred we change to 10 tens. Now we have 14 tens.

$$\begin{array}{r} {\scriptstyle \not{4}} \\ \not{6}\ \not{5}\ \not{4} \\ \boxed{5}\ \boxed{14}\ \boxed{14} \\ -\ 8\ 9 \end{array} \quad \text{or} \quad \begin{array}{r} {\scriptstyle 14} \\ 5\ \not{4}\ 14 \\ \not{6}\ \not{5}\ \not{4} \\ -\ 8\ 9 \end{array}$$

Step 3: Subtract. Did you get 565?

DIRECTIONS: Try these:

1)	2)	3)	4)	5)
851	243	360	125	924
-174	-56	-72	-67	-289

SOLVING PROBLEMS WITH ADDITION AND SUBTRACTION

PART VI

DIRECTIONS: Write a number sentence that tells the same story. Then solve.

1) In 1984, a woman died at the age of 61. When was she born?

2) Ross worked his regular 40-hour week and 11 hours overtime. How many hours did he work in all?

3) At 9 a.m. it was 33 degrees. At 5 p.m., the temperature was 19 degrees.

   a. What was the difference?
   b. Was this an increase or a decrease?

4) 2,350 people rode CTA buses to the Field Museum on Saturday, and on Sunday, 1,987. How many went by bus to the museum on the weekend?

5) After putting a $20 bill in her billfold, Maria had $63 there. How much did she have before putting in the bill?

6) John bought a dozen eggs three days ago. Now only 5 eggs are left. How many eggs were used?

7) Jennifer said she had bills of $375. Her husband owed bills of $129.

   a) Who owed more?
   b) How much more?
   c) How much did they owe together?

8) Mr. Como went to an auction. He bought a used TV for $57 and some pots and pans for $8. How much did he spend?

9) An apartment building has 300 apartments, but only 281 are rented. How many apartments are not rented?

10) Fred has been saving money to buy a used car for $550. He now has $367. How much more does he need to save?

SUBTRACTING WITH ZEROES

PART VII

A refrigerator cost $700. The down payment was $85. How much is owed?

We can find out by subtracting:

$$\begin{array}{r} 700 \\ -\ 85 \end{array}$$

But we can't take 5 from zero
and
we can't take 8 from zero.

We will make change.

700 can be 7 hundreds, 0 tens, and 0 ones

or 6 hundreds, 10 tens, and 0 ones

or 6 hundreds, 9 tens, and 10 ones ← use this one

$$\begin{array}{r} 6\ \ 9\ \ 10 \\ \cancel{7}\ \cancel{0}\ \cancel{0} \\ -\ 8\ \ 5 \\ \hline 6\ \ 1\ \ 5 \end{array}$$

We changed 700 in two steps. We started with the hundreds.

Step 1

Change a hundred to 10 tens

$$\begin{array}{r} \cancel{7}\ 10\ 0 \\ \boxed{6} \\ -\ \ 8\ 5 \end{array}$$

Step 2

Change a ten to 10 ones

$$\begin{array}{r} \cancel{7}\ \cancel{10}\ \cancel{0} \\ \boxed{6}\boxed{9}\boxed{10} \\ -\ 8\ 5 \end{array}$$

Step 3

Subtract

$$\begin{array}{r} \cancel{7}\ \cancel{10}\ \cancel{0} \\ \boxed{6}\boxed{9}\boxed{10} \\ -\ 8\ 5 \\ \hline 6\ 1\ 5 \end{array}$$

or

$$\begin{array}{r} 6\ \ 9\ \ 10 \\ \cancel{7}\ \cancel{10}\ \cancel{0} \\ -\ 8\ 5 \\ \hline 6\ 1\ 5 \end{array}$$

DIRECTIONS: Rename and subtract.

1) $\begin{array}{r} \cancel{3}\ \cancel{10}\ \cancel{0} \\ \boxed{2}\boxed{9}\boxed{10} \\ -\ 7\ 3 \\ \hline 227 \end{array}$

2) $\begin{array}{r} 8\ 0\ 0 \\ -\ 4\ 0\ 8 \end{array}$

3) $\begin{array}{r} 1\ 0\ 0 \\ -\ 1\ 8 \end{array}$

4) $\begin{array}{r} 5\ 0\ 0 \\ -\ 2\ 9\ 9 \end{array}$

5) $\begin{array}{r} 3,0\ 0\ 0 \\ -\ 7\ 6\ 5 \end{array}$

6) $\begin{array}{r} 2\ 0\ 0 \\ -\ 1\ 3\ 2 \end{array}$

7) $\begin{array}{r} 9\ 0\ 0 \\ -\ 8\ 1 \end{array}$

8) $\begin{array}{r} 6\ 0 \\ -\ 3\ 7 \end{array}$

9) $\begin{array}{r} 4\ 0\ 0 \\ -\ 2\ 0\ 5 \end{array}$

10) $\begin{array}{r} 7,0\ 0\ 0 \\ -\ 6,1\ 7\ 9 \end{array}$

PART VIII

DIRECTIONS: Solve the following problems.

1) 78 − 9	2) 376 − 9	3) 143 − 17	4) 981 − 69
5) 771 − 62	6) 201 − 29	7) 345 − 134	8) 276 − 84
9) 91 − 16	10) 263 − 198	11) 411 − 130	12) 708 − 48
13) 693 − 271	14) 84 − 67	15) 437 − 416	16) 513 − 217
17) 827 − 316	18) 696 − 577	19) 254 − 75	20) 352 − 166
21) 483 − 205	22) 421 − 99	23) 678 − 487	24) 590 − 584

PART IX

DIRECTIONS: Subtract the following.

EXAMPLES:

(A)	(B)	(C)
8,106	46,444	3,388,137
- 6,487	- 38,625	- 2,379,068
1,619	*7,819*	*1,009,069*

1) 3,005 - 239	2) 5,741 - 823	3) 1,376 - 87	4) 7,083 - 4,094
5) 98,821 - 97,063	6) 45,532 - 25	7) 30,400 - 9,748	8) 65,702 - 74
9) 307,651 - 9,097	10) 540,310 - 440,576	11) 925,670 - 693	12) 817,501 - 4
13) 867,065 - 374	14) 411,653 - 312,884	15) 634,079 - 899	16) 260,134 - 37
17) 5,055,613 - 6,464	18) 2,417,910 - 2,248,650	19) 8,464,154 - 5,999	20) 8,514,648 - 995,156
21) 3,101,993 - 1,650,285	22) 7,004,910 - 353,215	23) 4,791,243 - 3,897,355	24) 9,545,938 - 949

PART X

DIRECTIONS: Subtract the following.

EXAMPLE: 7,067 - 6,938 = ?

$$\begin{array}{r} 7{,}067 \\ -\ 6{,}938 \\ \hline 129 \end{array}$$

7,067 - 6,938 = 129

1) 804 - 37 =	2) 537 - 39 =	3) 670 - 83 =
4) 1,765 - 87 =	5) 7,036 - 387 =	6) 8,436 - 547 =
7) 87,567 - 698 =	8) 43,967 - 8,979 =	9) 65,630 - 48,941 =
10) 706,597 -587,698 =	11) 631,864 - 3,935 =	12) 435,637 - 2,747 =
13) 806,473 - 594 =	14) 200,145 - 96,749 =	15) 430,076 - 7,079 =

PART XI

DIRECTIONS: Solve each problem. Match your answer to one from the box on the right.

EXAMPLES:

1) 2,361 − 1,973 = (c) 388

2) 46,414 − 28,675 = (b) 75,089

3) 628,972 − 309,259 = (d) 319,713

4) 5,233,157 − 1,478,168 = (a) 3,754,989

a) 3,754,989
b) 75,089
c) 388
d) 319,713

1) 983 − 384

2) 706 − 539

3) 2,007 − 528

4) 9,634 − 628

a) 167
b) 9,006
c) 599
d) 1,479

5) 8,583 − 7,982

6) 32,346 − 28,978

7) 3,222 − 2,812

8) 87,006 − 59,677

a) 601
b) 410
c) 3,368
d) 27,329

9) 756,797 − 719,818

10) 6,946,310 − 5,637,419

11) 17,758 − 14,869

12) 91,310 − 62,451

a) 1,308,891
b) 28,859
c) 36,979
d) 2,889

13) 60, 810 − 55, 831

14) 248,166 − 159,268

15) 386,115 − 313,238

16) 15,181 − 12,395

a) 72,877
b) 4,979
c) 88,898
d) 2,786

OBJECTIVE: To understand fractional amounts of a dollar

SPOTS

Here are a lot of spots.

Rows go across. →

Columns go down. ↓

How many rows?

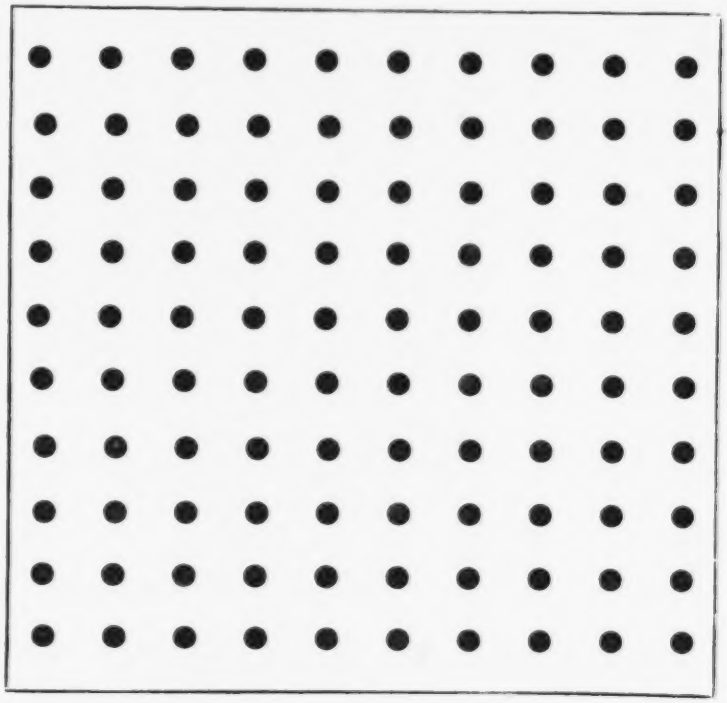
_____

How many columns?

_____

How many spots in all? (count)

_____



Since there are 100, we could think of each spot as 1¢. Then the whole square would be worth $1.

We can write:

1¢ = 1 cent = 1 penny

100¢ = 100 cents = 100 pennies

They are worth:

one dollar = $1 = $1.00

Since there are 100 pennies in a dollar, each is one hundredth of a dollar. We can write:

1¢ = $.01

You can use the square to find the answers to these questions:

How many pennies in half a dollar? _____

We can write:

one half dollar = 50 cents = 50¢ = $.50

Cut the square in half by drawing a line down the middle.

Now cut the square in two sideways. You will get 4 equal parts. So each part is one fourth of a dollar.

How many pennies in a fourth of a dollar?

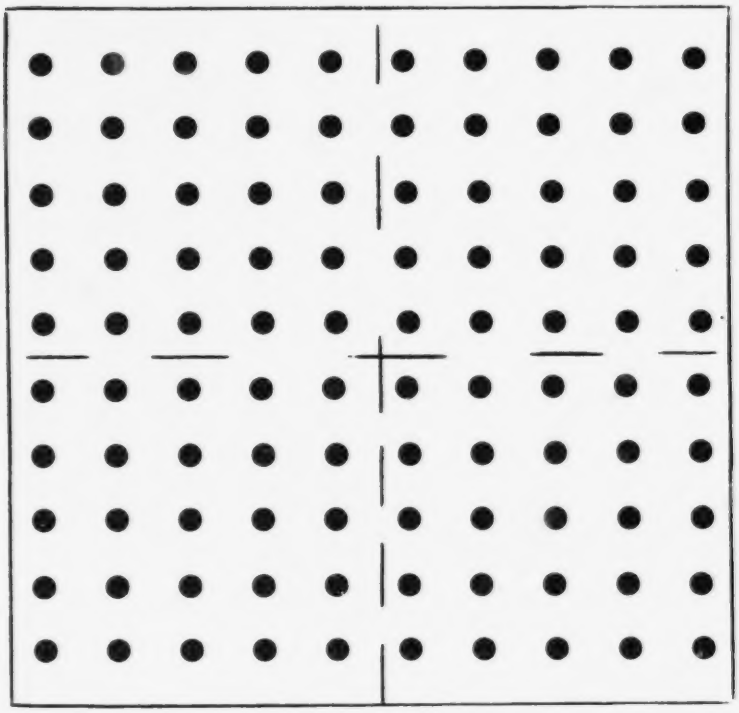
_____

We can write:

one fourth of a dollar = one quarter of a dollar = _____¢

or:

one quarter of a dollar = 25¢ = $.25



DIRECTIONS: Use the square of pennies to find the answers.

1) How many pennies in one row? _____ What coin could you change this for? _____

2) How many pennies in 3/4 of a dollar? _____ Write this two ways:

_____ or _____.

3) How many rows would it take to make $.60? ____

4) How many spots in half a row? _____ What coin could you change this for? _____

5) How many rows would it take to make $.45? ____

6) Which is **MORE**: 1/4 of the square, or three rows? _____

OBJECTIVE: To solve money problems using addition and subtraction

USING MONEY

Jack bought a hammer for $12.95 and a box of nails for $3.25. How much did they cost in all?

When we add or subtract money amounts, we have to line up the decimal points. We do this so that the cents will stay under each other and the dollars will stay under each other.

$12.95	hammer
+ 3.25	nails
$16.20	**total**

Sue needs $27.50 for a front-end alignment. She has $18.75. How much more does she need?

$27.50	alignment
- 18.75	she has
$ 8.75	she needs

PART I

A. DIRECTIONS: Find these money amounts.

1) $6.2 9
+ 4.3 6

2) $1 7.2 4
- 9.0 8

3) $1 6.9 9
+ 3.9 5

4) $2 0.0 0
- 7.2 9

5) $ 9.2 0
4 3.1 5
+ 6.0 0

6) $1 5.0 0
- 1 2.4 7

7) $8.3 7
+ .8 9

8) $2 5 4.3 0
- 1 8 9.6 9

B. DIRECTIONS: Rewrite each problem below. Line up the decimal points and solve.

1) $3.35 + $2.10

2) $17.40 - $12.95

3) $5.00 + $13.25 + $6.72

4) $10.00 - $8.46

PART II

DIRECTIONS: Find these money amounts. Watch the signs to add or subtract.

EXAMPLE 1.

$$\begin{array}{r} \$10.95 \\ +\ 4.59 \\ \hline \$15.54 \end{array}$$

EXAMPLE 2.

$$\begin{array}{r} \$10.95 \\ -\ 4.59 \\ \hline \$\ 6.36 \end{array}$$

1) $\begin{array}{r} \$3\ 0.9\ 9 \\ +\quad 9.1\ 7 \\ \hline \end{array}$

2) $\begin{array}{r} \$4\ 5.5\ 3 \\ -\quad 8.7\ 3 \\ \hline \end{array}$

3) $\begin{array}{r} \$1\ 6.5\ 1 \\ +\quad 6.0\ 9 \\ \hline \end{array}$

4) $\begin{array}{r} \$2\ 5.0\ 7 \\ +\quad 7.5\ 4 \\ \hline \end{array}$

5) $\begin{array}{r} \$7\ 4.0\ 0 \\ -\quad 5.9\ 8 \\ \hline \end{array}$

6) $\begin{array}{r} \$5\ 6.9\ 5 \\ +\ 1\ 1.3\ 7 \\ \hline \end{array}$

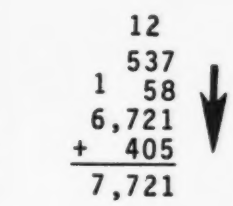
7) $\begin{array}{r} \$9\ 7.5\ 0 \\ -\ 2\ 2.2\ 5 \\ \hline \end{array}$

8) $\begin{array}{r} \$6\ 3.1\ 2 \\ +\ 2\ 9.8\ 7 \\ \hline \end{array}$

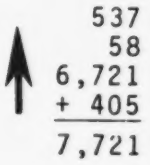
9) $\begin{array}{r} \$4\ 7.1\ 9 \\ -\ 4\ 1.6\ 5 \\ \hline \end{array}$

OBJECTIVE: To check addition

CHECKING ANSWERS WHEN ADDING



To check your answer, add the numbers going down the first time and add the numbers going up the second time.



To solve:

Add the ones column going down:
7+8=15+1=16+5=21.
Continue adding until the problem is done.

To check:

Add the ones column going up:
5+1=6+8=14+7=21.
Continue adding until the problem is done.

DIRECTIONS: Add the following. Check your answer by adding the problem again going up.

1) 742 + 22

2) 876 + 49

3) 985 + 428

4) 485 + 977

5) 862 7 + 3,489

6) 5,143 8 + 465

7) 6 1,603 + 8,695

8) 569 65 + 8

9) 994 53 602 + 8

10) 257 65 64 + 332

11) 78 537 94 + 6

12) 3 384 70 + 24

OBJECTIVE: To check answers to addition and subtraction

ADDITION AND SUBTRACTION

Every addition fact has 2 related subtraction facts.

$$6 + 4 = 10$$

So $10 - 4 = 6$

and $10 - 6 = 4$

DIRECTIONS: Write the related facts:

1. If $8 + 3 = 11$, then $11 - ___ = ___$ and $11 - ___ = ___$

2. If $9 - 3 = 6$, then $6 + ___ = ___$ and $3 + ___ = ___$

3. Addition Fact: $25 + 75 = 100$

   Subtraction Facts: _____

   _____

4. Subtraction Fact: $40 - 8 = 32$

   Addition Facts: _____

   _____

We can use this to check our subtraction. **EXAMPLE:**

Step 1: Subtract:

$$\begin{array}{r} {}^{9}\cancel{8}\,{}^{10}\cancel{8} \\ -\ 3\ 7 \\ \hline 6\ 3 \end{array}$$

Step 2: Cover the top row:

$$\begin{array}{r} \\ -\ 3\ 7 \\ \hline 6\ 3 \end{array}$$

Step 3: Draw line and add:

$$\begin{array}{r} \\ -\ 3\ 7 \\ \hline 6\ 3 \\ \hline 1\ 0\ 0 \end{array}$$

Step 4: Uncover and compare:

$$\begin{array}{r} 1\ 0\ 0 \\ -\ 3\ 7 \\ \hline 6\ 3 \\ \hline 1\ 0\ 0 \end{array}$$

They match! _____

OBJECTIVE: To check answers to subtraction problems

Here is a subtraction problem. 325 - 287 = _____

Here it has been subtracted.

$$\begin{array}{r} 325 \\ -\ 287 \\ \hline 38 \end{array}$$

If we write the answer in the sentence, we get 325 - 287 = 38.

If this is correct, we have a related addition fact:

287 + 38 = 325

We can use this to check our subtraction: Cover the top row of the number and add 287 and the difference 38. We should get 325 back again.

It works!

$$\begin{array}{r} \\ -\ 287 \\ \hline 38 \\ \hline 325 \end{array}$$

(Cover up)

Draw new line and add

A. DIRECTIONS: Subtract the following. Then draw a line and check by adding. The first one has been done.

1) $\begin{array}{r} 457 \\ -\ 93 \\ \hline 364 \\ \hline 457 \end{array}$

2) $\begin{array}{r} 93 \\ -\ 67 \\ \hline \end{array}$

3) $\begin{array}{r} 807 \\ -\ 543 \\ \hline \end{array}$

4) $\begin{array}{r} 3,000 \\ -\ 1,738 \\ \hline \end{array}$

5) $\begin{array}{r} 8,346 \\ -\ 868 \\ \hline \end{array}$

6) $\begin{array}{r} 365 \\ -\ 27 \\ \hline \end{array}$

7) $\begin{array}{r} 4,289 \\ -\ 3,367 \\ \hline \end{array}$

8) $\begin{array}{r} 1,006 \\ -\ 987 \\ \hline \end{array}$

B. DIRECTIONS: Subtract. Check your work by adding.

1) 40
- 27
13
40

2) 80
- 46

3) 185
- 39

4) 66
- 17

5) 207
- 134

6) 635
- 409

7) 124
- 95

8) 99
- 55

9) 100
- 64

10) 200
- 175

11) 4,125
- 681

12) 950
- 468

13) 6,000
- 5,999

14) 483
- 217

15) 7,000
- 4,602

OBJECTIVE: To demonstrate the concept of multiplication

WHAT IS MULTIPLICATION?

Example 1: If 2 cars are going and each car can hold 4 people, how many people can go?

We can add: 4 people + 4 people = 8 people

4 + 4 = 8

Or we can multiply: 2 times 4 people = 8 people

2 x 4 = 8

Example 2: If there are 3 rows and 3 hammers in each row, how many hammers?

We can add:

3 hammers
3 hammers
+ 3 hammers
9 hammers

Or we can multiply:

3 x 3 = 9

PRACTICE: Write the sentences:

If there are 2 families with 5 in each family, how many in all?

Add: ____ + ____ = _____

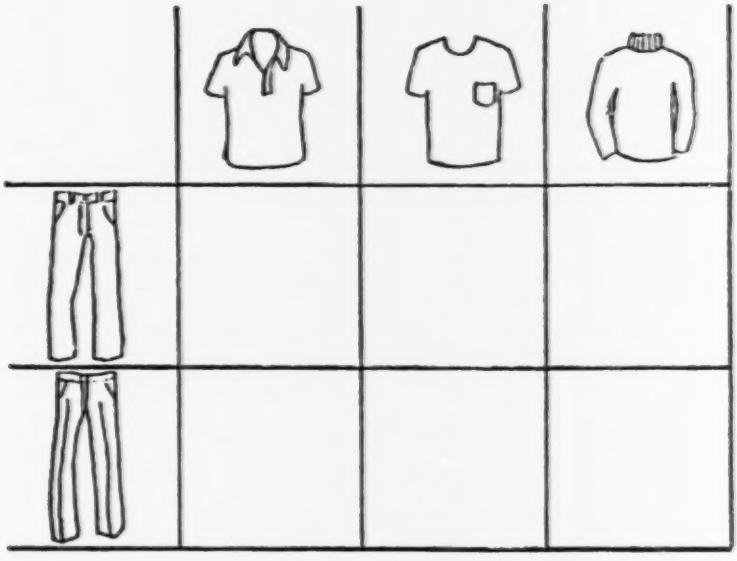
Multiply: ____ x ____ = _____

Sometimes we can find an answer just by counting.

EXAMPLE 3: If you buy 2 pairs of pants and 3 shirts, how many different outfits do you have?

(Fill in the squares to show the different outfits. Then count them.)

You have ____ different outfits.



Write a multiplication sentence about the picture: ____ x ____ = ____

EXAMPLE 4: If you got 5 letters, but each one had 0 money in it, how much did you get in all?

$0 + $0 + $0 + $0 + $0 = _____

Multiplication: 5 x 0 = _____

OBJECTIVE: To demonstrate the concept of multiplication

MULTIPLICATION FACTS

How to find a multiplication fact you don't know:

Try 3 x 5. This could be 3 sets of 5. So draw them.

Then count them all. There are _____. So 3 x 5 = _____

A. DIRECTIONS: Fill in this table with the facts we have used.

TIME TABLE

X	0	1	2	3	4	5
0						
1						
2						
3						15
4						
5						

Rows go across →

Columns go down ↓

3 x 5 = 15. Find the 3 row and 5 column. Where they meet, we write 15.

Now fill in the other facts we know.

To finish the table:

Step 1 Any number x 0 = 0
So write zero in all the squares under zero and in the zero row.

Step 2 Fill in the 1-column by counting by 1's.

Step 3 Fill in the 2-column by counting by 2's

Step 4 Fill in the 5-column by counting by 5's.

Step 5 Fill in the 3-column by always adding 3 to the one above.

Step 6 Fill in the 4-column by always adding 4 to the one above.

DOUBLE FUN

A TV ad for gum says we should "double our fun." What does it mean to double?

Here are some words which all mean the same:

Double = twice = two times

Warren is told he can double his money if he bets on a certain horse. If he bets $8, and the horse wins, how much will he get?

"Double" means 2 times. We can either add

$$\begin{array}{r} \$8 \\ +\ 8 \\ \hline \$16 \end{array}$$

or multiply: $2 \times 8 = \$16$

In this lesson you will add.

EXAMPLE: To double $456 just add $456 to itself:

$$\begin{array}{r} \$\ 4\ 5\ 6 \\ +\ 4\ 5\ 6 \\ \hline \$\ 9\ 1\ 2 \end{array}$$

B. DIRECTIONS: Double each number by adding the number to itself.

1) 24 doubled is 48

$$\begin{array}{r} 24 \\ +\ 24 \\ \hline 48 \end{array}$$

2) Double 85 _____

3) Twice 63 is _____

4) Double 302 _____

5) Double 1,674 _____

6) Double 213 _____

7) Double 192 _____

8) Two times 700 is _____

9) Double 89 _____

10) Twice 3,200 is _____

DOUBLE DESSERT

C. DIRECTIONS: Double this cake recipe. Fill in the recipe on the right.

Pound Cake	Doubled Pound Cake
2 cups flour	4 cups flour
1 teaspoon baking powder	
1 cup butter	
1 cup sugar	
2 tablespoons lemon juice	
5 eggs	

DOUBLE OR NOTHING

Warren still thinks he can double his money if he bets on a certain horse.

Suppose . . . . just suppose. . . that his horse won, and Warren bet it all and kept winning.

Suppose Warren bet $6.

For six times, the horse won. Warren bet again and he doubled his money again.

How much would he have?

Solution:

Double $6 — 1 time

$6 + 6 = $12

2 times

$12 + 12 =

Finish the problem. Warren will end up with _____

OBJECTIVE: To recall multiplication facts for 0-12

MORE MULTIPLICATION FACTS

You know some of the multiplication facts. Now you will find the rest of them. Follow the directions carefully.

Columns ↓

Rows →

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

Step 1.

Fill in the 0 row and the 0 column with all 0's.

The rest of the table you will fill in by columns.

Step 2.

Fill in the 1's column by counting by 1's.

Step 3.

Fill in the 2's column by counting by 2's.

(OR by adding 2 to the one above)

Step 4. Fill in the 5's column by counting by 5's. (OR by adding 5 to the one above)

When you have this much done, check your table with the next page.

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2			5							
2	0	2	4			10							
3	0	3	6			15							
4	0	4	8			20							
5	0	5	10			25							
6	0	6	12			30							
7	0	7	14			35							
8	0	8	16			40							
9	0	9	18			45							
10	0	10	20			50							
11	0	11	22			55							
12	0	12	24			60							

Step 5. Fill in the 10's column by counting by 10's.

(OR you can just add 10 to the one above)

You will fill in the rest of the columns by adding.

Step 6. 11 column
Write 11 in the first box. Then add 11.

Write 22 in the second box.

Add 11 again. Write 33 in the next box.

Keep adding 11 and finish the 11 column.

All the rest of the columns are found the same way.

Step 7. Do the 3 column next. Write 3 in the first box under the zero. Then add 3 to get 6. Write 6 in the next box. Finish the 3 column, always adding 3 to your last number.

Step 8. Now fill in the rest of the columns, one at a time, by adding to the one above.

OBJECTIVE: To use a multiplication table to solve problems

USING THE MULTIPLICATION TABLE

You can use a times table to look up multiplication facts.

If we want to know

$7 \times 9 = ?$

Look in the 7 row and the 9 column.

With your left hand, run your finger across the 7 row.

With your right hand, run your finger down the 9 column.

Where do they meet?

$7 \times 9 =$ _____

9 COLUMN ↓

7 ROW →

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

A. DIRECTIONS: Use the table above or your own to multiply:

1) $6 \times 5 =$ _____

2) $\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$

3) $4 \times 12 =$ _____

4) $7 \times 2 =$ _____

5) $1 \times 12 =$ _____

6) $11 \times 9 =$ _____

7) $\begin{array}{r} 7 \\ \times\ 8 \\ \hline \end{array}$

8) $0 \times 12 =$ _____

9) $9 \times 5 =$ _____

10) $\begin{array}{r} 10 \\ \times\ 6 \\ \hline \end{array}$

11) $\begin{array}{r} 6 \\ \times\ 8 \\ \hline \end{array}$

12) $12 \times 7 =$ _____

13) $7 \times 7 =$ _____

14) $\begin{array}{r} 9 \\ \times\ 9 \\ \hline \end{array}$

15) $8 \times 8 =$ _____

16) $10 \times 1 =$ _____

17) $\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$

18) $5 \times 7 =$ _____

19) $10 \times 10 =$ _____

20) $\begin{array}{r} 11 \\ \times\ 7 \\ \hline \end{array}$

You know that 2 x 3 = 6. 2 and 3 are the **FACTORS** and 6 is the **PRODUCT.**

Sometimes we have the product and want to know: What are the factors?

EXAMPLE: Factor 12.

This means to fill in the blanks,
12 = _____ x _____
"Factor" means to "UN-multiply."
One way to solve it is to look for 12, the product, in the middle of the times table. Then look for the factors outside, at the ends of the row and column that meet at 12.

Solution 1: 12 = 2 x 6
or 6 x 2

Solution 2: 12 = 12 x 1
or 1 x 12

Solution 3: 12 = 3 x 4
or 4 x 3

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	(12)
2	0	2	4	6	8	10	(12)	14	16	18	20	22	24
3	0	3	6	9	(12)	15	18	21	24	27	30	33	36
4	0	4	8	(12)	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	(12)	24	36	48	60	72	84	96	108	120	132	144

This problem had more than one solution. Use your times table to find at least one solution for each.

B. DIRECTIONS: Factor each. The first one has been done.

1) 15 = 3 x 5
2) 9 = ___ x ___
3) 35 = ___ x ___
4) 18 = ___ x ___
5) 25 = ___ x ___
6) 6 = ___ x ___
7) 10 = ___ x ___
8) 48 = ___ x ___
9) 24 = ___ x ___
10) 28 = ___ x ___
11) 21 = ___ x ___
12) 90 = ___ x ___
13) 77 = ___ x ___
14) 20 = ___ x ___
15) 56 = ___ x ___
16) 32 = ___ x ___
17) 40 = ___ x ___
18) 54 = ___ x ___
19) 63 = ___ x ___
20) 121 = ___ x ___
21) 108 = ___ x ___
22) 84 = ___ x ___
23) 72 = ___ x ___
24) 144 = ___ x ___

MATHEMAGIC

We already know some number patterns.

EXAMPLE:

Count by 5's and fill in the blanks:

5
10
___
___
___
___
___
___
___
___

You know that each of these multiples of 5 ends in either ___ or ___.

Here is another pattern. We find it in the 9 times table. Look at the digits in the products and add them:

9 x 1 = 9		
9 x 2 = 18	two digits, 1 and 8.	1 + 8 = _____
9 x 3 = 27	2 + 7 =	_____
9 x 4 = 36	3 + 6 =	_____
9 x 5 = 45	4 + 5 =	_____
9 x 6 = 54	5 + 4 =	_____
9 x 7 = 63	6 + 3 =	_____
9 x 8 = 72	7 + 2 =	_____
9 x 9 = 81	8 + 1 =	_____
9 x 10 = 90	9 + 0 =	_____

Patterns like this can help us remember the multiples of 9.

Here is another trick. The hardest multiplication fact to remember is:

7 x 8 = 56

But not if you turn it around:

56 = 7 x 8

because then it's just like counting: 5, 6, 7, 8!

OBJECTIVE: To multiply by a 1-digit number

21 x 3 or $\begin{array}{r} 21 \\ \times 3 \end{array}$ means three 21's or $\begin{array}{r} 21 \\ 21 \\ +\ 21 \\ \hline 63 \end{array}$

We can find it by adding:

Or we can use multiplication as a short cut.

To multiply:

	ones		tens
Start with the ones digit. Multiply 3x1.	$\begin{array}{r} 21 \\ \times\ 3 \\ \hline 3 \end{array}$ ↑ ones	Next, multiply 3 by the tens digit. 3 x 2 tens.	$\begin{array}{r} 21 \\ \times\ 3 \\ \hline 63 \end{array}$ ↑ tens

EXAMPLE:

Step 1: $\begin{array}{r} 70 \\ \times\ 5 \\ \hline 0 \end{array}$ ↑

Step 2: $\begin{array}{r} 70 \\ \times\ 5 \\ \hline 350 \end{array}$ ↑

Check by adding $\begin{array}{r} 70 \\ 70 \\ 70 \\ 70 \\ +\ 70 \\ \hline 350 \end{array}$

PART I

DIRECTIONS: Multiply. Use your times table if you need it.

1) $\begin{array}{r} 32 \\ \times\ 3 \end{array}$ 2) $\begin{array}{r} 43 \\ \times\ 2 \end{array}$ 3) $\begin{array}{r} 64 \\ \times\ 2 \end{array}$ 4) $\begin{array}{r} 71 \\ \times\ 8 \end{array}$ 5) $\begin{array}{r} 90 \\ \times\ 5 \end{array}$

6) $\begin{array}{r} 53 \\ \times\ 3 \end{array}$ 7) $\begin{array}{r} 10 \\ \times\ 9 \end{array}$ 8) $\begin{array}{r} 82 \\ \times\ 4 \end{array}$ 9) $\begin{array}{r} 21 \\ \times\ 6 \end{array}$ 10) $\begin{array}{r} 69 \\ \times\ 1 \end{array}$

11) 21 x 4	12) 10 x 4	13) 31 x 3	14) 22 x 4	15) 40 x 2
16) 11 x 8	17) 44 x 2	18) 32 x 2	19) 13 x 3	20) 41 x 1
21) 33 x 3	22) 40 x 3	23) 11 x 5	24) 41 x 2	25) 20 x 3
26) 12 x 4	27) 10 x 7	28) 61 x 2	29) 11 x 6	30) 34 x 2

PART II

Knowing How

EXAMPLE: Is 33 X 2 > 77? **or** Is 33 x 2 < 77?

To find out if 33 x 2 is greater than 77, multiply 33 x 2. Then compare the answer, 66, to the number 77. 66 is really less than (<) 77. Write the < symbol. Here are some more examples. The correct symbol has been written for you.

A) 41 x 4 > 64 B) 11 x 5 < 66

DIRECTIONS: Write the correct symbol in each sentence. The first one has been done for you.

1)	22 x 4	< 98	2)	13 x 3	40
3)	51 x 2	100	4)	21 x 5	95
5)	13 x 3	29	6)	11 x 7	80
7)	42 x 2	96	8)	72 x 4	188
9)	33 x 3	106	10)	80 x 9	710
11)	62 x 2	104	12)	63 x3	186
13)	40 x 4	80	14)	11 x 5	66
15)	91 x 2	202	16)	92 x 4	478
17)	10 x 5	60	18)	70 x 8	650
19)	11 x 9	89	20)	34 x 2	108

OBJECTIVE: To solve problems

PROBLEM SITUATIONS

Here are some things on sale: shirts $7, jeans $8, socks $2, jackets $14, purses $5.

Edna has a $20 bill. Forget about tax for now; let's see what she can buy.

> **Example 1:** Can she buy a shirt and jacket?
>
> **Solution:** $7 + $14 = $21 > $20
> NO, she can't.
>
> **Example 2:** shirt + purse + socks?
>
> **Solution:** $7 + $5 + $2 = $14 < $20
> YES, she can.

DIRECTIONS: Answer these.

1) Decide if Edna can buy these:

   a. 2 pairs of jeans and a shirt? _____
   b. a jacket and a purse? _____
   c. 3 shirts? _____

2) Make up two different lists of things Edna can buy.

   a. She can buy _____.

   b. She can buy _____.

3) How much more would she need to buy:

   a. a jacket, purse and pair of socks? _____
   b. 2 pairs of jeans and a shirt? _____

4) If the original price of jeans was $11, and Edna bought two pairs at the sale price, how much did she save? _____

5) How much would Edna have left over if she bought:

   a. one shirt and one pair of jeans? _____
   b. two purses and one pair of socks? _____
   c. a jacket and two pairs of socks? _____
   d. a purse and a pair of jeans? _____

6) If Edna bought a jacket, what other items would she have enough money to buy?

   _____

OBJECTIVE: To solve one-step word problems with addition, subtraction, and multiplication

MIXED PRACTICE

DIRECTIONS: Solve the word problems below.

1. Pete's company started an after-work baseball team. There are 4 players from the Sales department, 2 from the mailroom, 7 from the warehouse, and 5 from Customer Service. How many players are there in all?

2. A sorority in Chicago had 28 members until three members moved. How many were left?

3. Bob sells newspapers on the street in the mornings. He sold $10 worth on Monday, $11 on Tuesday, and $8 on Wednesday. How much did he sell altogether?

4. A small theater has 6 rows and 12 seats in each row. How many seats are there in all?

5. A boy counted all the buildings on his block. There were 9 houses, 3 stores, and 5 apartment buildings. How many were there in all?

6. A man weighed his 4-month-old baby by first standing on a scale without the baby. He weighed 154 lbs. Then his wife gave him the baby, and together baby and father weighed 170 lbs. How much did the baby weigh?

7. In a six-pack of cola, each can often holds 12 oz. How many ounces of cola are there altogether?

8. Jackie's music group can play 4 different styles. They know 12 gospel songs, 14 soul songs, 9 R & B songs, and 7 rock and roll songs. How many songs do they know in all?

9. The lunch counter will make up sandwiches in two kinds of bread (white and whole wheat) and three fillings (ham, cheese, or tuna). How many different kinds of sandwiches can you get?

10. There are about 3 million people in the Chicago metropolitan area. If there are 1 million in the suburbs, how many live in the City of Chicago?

11. A box of diapers holds 18 diapers. How many diapers will a carton with 6 boxes hold?

OBJECTIVE: To use number patterns by 2's, 5's, 10's, and 100's

FINDING PATTERNS

We count by 2's by taking things two at a time. Two times any number is an even number: 2, 4, 6, 8, 10.

6 = ** ** ** 3 groups of 2

There are also multiples of 5. They contain so many groups of 5.

15 = 𝍸 𝍸 𝍸 3 groups of 5

We count by 5's by taking things five at a time. Numbers that are multiples of 5 always end with a 5 or a 0: 5 10, 15, 20, 25.

We can also count easily by 10's. Multiples of 10 always end with a zero (0). They have names like thirty (30), forty (40) fifty (50), and so on. Thirty, for instance, means 3 groups of 10.

30 = 𝍸𝍸 𝍸𝍸 𝍸𝍸 3 groups of ten

COUNTING PRACTICE

A. Count by 2's aloud as you fill in the blanks:

a. 2, 4, 6, 8, 10,___,___,___,___,___,___,___,___,___,___

b. 52, 54, 56,___,___,___,___,___,___,___,___,___

c. 76, 78, 80,___,___,___,___,___,___,___,___,___

d. 102, 104, 106, 108, 110,___,___,___,___,___,___,___

e. 346, 348, 350,___,___,___,___,___,___,___,___

B. Count by 5's aloud as you fill in the blanks:

a. 5, 10, 15, 20,___,___,___,___,___,___,___,___

b. 35, 40, 45,___,___,___,___,___,___,___,___,___

c. 70, 75, 80,___,___,___,___,___,___,___,___,___

d. 190, 195, 200, 205,___,___,___,___,___,___,___,___

e. 425, 430, 435,___,___,___,___,___,___,___

C. Count by 10's aloud as you fill in the blanks:

a. 10, 20, 30,___,___,___,___,___,___,___,___,___

b. 150, 160, 170,___,___,___,___,___,___,___,___,___

c. 80, 90, 100, 110,___,___,___,___,___,___,___,___

d. 600, 610,___,___,___,___,___,___,___,___,___,___

e. 25, 35, 45,___,___,___,___,___,___,___,___,___,___

D. Now try counting by 100's aloud as you fill in the blanks:

100, 200, 300, 400,___,___,___,___,___,___

(ten hundred can also be call one thousand)

E. Write the missing number (s) in each of these patterns. Count either by 2's, 5's, or 10's.

1. 22, 24, 26, 28, ___
2. 18, 20, 22, 24, ___
3. 40, 50, ___, ___, 80
4. ___, 70, 80, 90, ___
5. 25, 30, ___, 40, ____
6. 4, ___, 8, 10, ___
7. 15, 25, ___, ___, 55
8. 72, ___, 76, 78, ___
9. 8, ___, ___, 14, 16
10. 45, 55, 65, ___, ___
11. 60, ___, 80, ___, 100
12. 50, 52, 54, 56, ___
13. 82, 84, 86, 88, ___
14. 16, 18, 20, 22, ___
15. 64, 66, ___, ___, 72
16. 25, ___, 45, 55, ___
17. ___, 40, 50, 60, ___
18. ___, 48, 50, ___, 54
19. 92, 94, 96, 98, ___
20. 5, 10, ___, 20, ___
21. 60, ___, 70, 75, ___
22. 20, ___, 40, 50, ___
23. 75, 80, 85, 90, ___
24. 36, ___, 40, ___, 44
25. ___, 94, 96, ___, 100
26. ___, 90, 92, 94, 96
27. 2, ___, 6, 8, ___
28. 55, 65, 75, 85, ___
29. 40, ___, 50, ___, 60
30. 80, ___, 90, ___, 100

OBJECTIVE: To solve number patterns

NUMBER PATTERNS

Some numbers are special. Let's look at some.

A. DIRECTIONS: Add.

7 + 0	6 + 0	0 + 0	10 + 0	8 + 0
5 + 0	81 + 0	0 + 23	67 + 0	999 + 0

Now write in words what you know about adding 0 to another number:

_____

_____

B. DIRECTIONS: Multiply.

7 x 0	6 x 0	0 x 3	0 x 2	8 x 0
5 x 0	81 x 0	0 x 7	67 x 0	999 x 0

Write in words what you know about multiplying by 0:

_____

_____

C. DIRECTIONS: Add.

7 + 1	6 + 1	0 + 1	3 + 1	8 + 1
5 + 1	81 + 1	1 + 23	67 + 1	992 + 1

Write in words what you know about adding 1 to another number:

_____

_____

D. DIRECTIONS: Add.

9 + 1	39 + 1	79 + 1	59 + 1	29 + 1
69 + 1	99 + 1	199 + 1	499 + 1	

Did you see a pattern? Write it in words:

_____

_____

E. DIRECTIONS: Multiply.

7 x 1	6 x 1	1 x 3	1 x 2	8 x 1
5 x 1	81 x 1	1 x 7	67 x 1	999 x 1

MIXED PRACTICE

F. DIRECTIONS: Write the answers. Watch the signs!

1) $6 \times 1 =$ ____

2) $\begin{array}{r} 7 \\ +\ 0 \\ \hline \end{array}$

3) $8 - 2 =$ ____

4) $\begin{array}{r} 8 \\ \times\ 2 \\ \hline \end{array}$

5) $\begin{array}{r} 3 \\ \times\ 4 \\ \hline \end{array}$

6) $2 + 7 =$ ____

7) $0 \times 3 =$ ____

8) $\begin{array}{r} 9 \\ -\ 4 \\ \hline \end{array}$

9) $\begin{array}{r} 8 \\ +\ 1 \\ \hline \end{array}$

10) $7 - 1 =$ ____

11) $\begin{array}{r} 8 \\ -\ 0 \\ \hline \end{array}$

12) $\begin{array}{r} 1 \\ \times\ 5 \\ \hline \end{array}$

13) $\begin{array}{r} 6 \\ +\ 1 \\ \hline \end{array}$

14) $5 + 0 =$ ____

15) $9 \times 0 =$ ____

16) $\begin{array}{r} 3 \\ +\ 1 \\ \hline \end{array}$

17) $\begin{array}{r} 3 \\ \times\ 1 \\ \hline \end{array}$

18) $\begin{array}{r} 3 \\ \times\ 0 \\ \hline \end{array}$

19) $\begin{array}{r} 3 \\ +\ 0 \\ \hline \end{array}$

20) $9 \times 1 =$ ____

OBJECTIVE: To multiply by powers of 10

POWERS OF TEN IN MULTIPLICATION

There is a pattern we can use in our number system. When 10 is multiplied by itself, we get:

10 = 10
10x10 = 100
10x10x10 = 1,000
10x10x10x10 = 10,000
10x10x10x10x10 = 100,000
10x10x10x10x10x10 = 1,000,000

Each of the numbers on the right side is just 10 times the one above.

Count the number of zeroes in each number. You will see that it is the same as the number of tens we multiplied.

This makes it easy to multiply by tens.

EXAMPLES: 10 x 100 = 1,000
5 x 1,000 = 5,000
100 x 100 = 10,000

PART I

DIRECTIONS: Multiply the following problems. Use your shortcut. The first one has been done for you.

	x	10	100	1,000	10,000	100,000	1,000,000
1)	46	460	4,600	46,000	460,000	4,600,000	46,000,000
2)	7						
3)	146						
4)	23						
5)	64						
6)	9						
7)	112						
8)	74						
9)	392						
10)	2						

71

PART II

DIRECTIONS: Multiply the following problems. Remember to shortcut.

1) 58 x 10	2) 10 x 25	3) 397 x 10	4) 863 x 10
5) 867 x 100	6) 796 x 100	7) 100 x 96	8) 3,767 x 100
9) 7,673 x 1,000	10) 37,847 x 1,000	11) 66,783 x 10,000	12) 10,000 x 46,709

13) 100 x 3 =	14) 5 x 100 =	15) 236 x 1,000 =
16) 98 x 10,000 =	17) 407 x 1,000 =	18) 10,000 x 7,065 =

OBJECTIVE: To solve one-step word problems with addition and subtraction

PART I

DIRECTIONS: Solve these problems.

1. How much is 463 and 51? _____
2. What is the difference of 3,160 and 50? _____
3. What is the total of 5,463, 2,112 and 97? _____
4. How much less than 513 is 505? _____
5. What is the sum of 5,463,010 and 1,000,000? _____

PART II

DIRECTIONS: This exercise will help you understand the information given in word problems. Each word problem has some statements following it. Place a (T) for true next to the ones that are true. The first one has been done for you.

1. The radio played five songs in a row. Jackie was on the phone and missed one song. How many songs did she hear?

   ___T___ There were 5 songs in a row.

   _____ Jackie heard all the songs.

   ___T___ One song was not heard.

   ___T___ This problem is written 5-1 = 4.

   _____ The answer is three.

2. Ramon earned $300 building a newspaper stand. He earned $50 fixing a car. He also made $75 selling bricks. How much did Ramon earn?

   _____ Ramon earned money three ways.

   _____ Ramon spent $300.

   _____ $300 + $50 = $350.

   _____ $350 + $75 = $425.

   _____ The answer is $350.

73

3. Martha borrowed a book from James. He wants her to return it Friday. The book has 296 pages. She has read 153. How many pages must she read before Friday?

_____ James wants the book now.

_____ Martha has read 296 pages.

_____ There are 296 pages in the book.

_____ Martha has 143 pages left to read.

_____ This problem is written 296 - 153 = 143.

4. Senator Vila got 55,332 votes from one district. Another gave him 15,973 votes. What was his total vote?

_____ The two districts gave Vila the same number of votes.

_____ This problem is written 55,332 + 15,973 = 71,305.

_____ "Total" tells us to add.

_____ The answer is 71,305.

_____ The answer is greater than 55,332.

5. What is the difference of 35,456 and 5,321?

_____ "And" always means to add.

_____ "Is" means equals.

_____ "Difference" means the same as total.

_____ "Difference" means to subtract.

_____ 30,135 is the difference.

PART III

DIRECTIONS: Solve these word problems.

1. The basketball player scored 23 points one game. He scored 24 points the next game and 18 points the game after that. What was his total for three games? _____

2. There were 22,000 people at the outdoor concert. Another 4,300,000 saw the concert on cable TV. How many more saw the concert on cable? _____

3. What is the total of 5,356,000 and 15,612? _____

4. A couple on a quiz show won $1,500. They were on twice more. They won $1,500 the second time. The third time they only won $300. What were their total winnings? _____

5. Elena has 23 bus tokens. She will need 47 for the month. How many more does she need? _____

6. Mr. Tracy did 18 math problems on Monday. On Tuesday he did 36. On Wednesday he did 27. How many problems did he do altogether? _____

7. A dress costs $225 at the department store. The same dress costs $170 at the wholesale store. How much less does it cost at the wholesale store? _____

8. Is 463 the difference of 635 and 172? _____

9. The football player had a contract for $6,000,000. His teammate had one for $4,000,000. A third player had one for $1,200,000. How much did the team owner pay these players? _____

10. Edward bought a money order for $335. He paid for it with four $100 bills ($400). How much change did he get back? _____

OBJECTIVE: To solve one-step word problems with multiplication

DIRECTIONS: Solve these problems.

1. What is 4 times 60? _____

2. What is twice 40? _____

3. What is the product of 10 times 100? _____

4. Roberto fried 6 eggs. His family eats twice as many eggs for breakfast. How many more eggs should Roberto fry? _____

5. The builder bought 9 pounds of three-penny nails. He would need 3 times as much to finish the job. How many pounds of nails does he need? _____

6. Ten businesses each gave $10,000 to United Way. What was the total amount given? _____

7. Tess spends $12 a week on bus rides. How much will she spend in 4 weeks? _____

8. Apples were on sale for 11¢ each. Sven bought eight apples. How much were they? _____

9. The Denver boot went on 5 cars. Each car owner owed $1,000 in unpaid parking tickets. What was the total owed the city? _____

10. Wilfredo Cruz makes $50 a day. How much will he make in 10 days? _____

OBJECTIVE: To recognize units of time

TIME

The short hand tells the hours.
The long hand tells the minutes.

Use a colon (:) to separate the hours from the minutes.

EXAMPLE (A)

The short hand is on 11
The long hand is on 4
The time is 11:20

EXAMPLE (B)

The short hand is on 7
The long hand is on 10
The time is 7:50

PART I

DIRECTIONS: Look at these clocks. Find the number the short hand is on and the number the long hand is on for each clock. Then tell the time.

1)

The short hand is on _____
The long hand is on _____
The time is _____

2)

The short hand is on _____
The long hand is on _____
The time is _____

77

3)

The short hand is on _____
The long hand is on _____
The time is _____

4)

The short hand is on _____
The long hand is on _____
The time is _____

5)

The short hand is on _____
The long hand is on _____
The time is _____

6)

The short hand is on _____
The long hand is on _____
The time is _____

7)

The short hand is on _____
The long hand is on _____
The time is _____

PART II

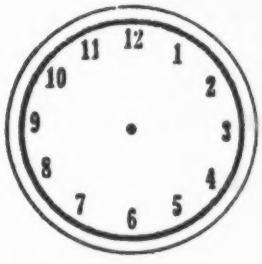
DIRECTIONS: Put the time on each clock.

EXAMPLES:

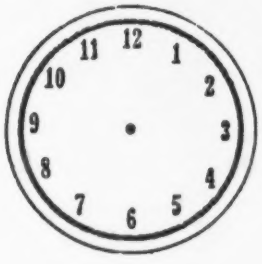
A) 9:45

B) 12:40

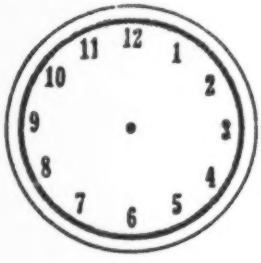
1) 11:35



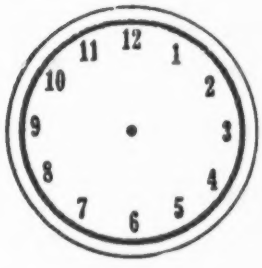
2) 1:45



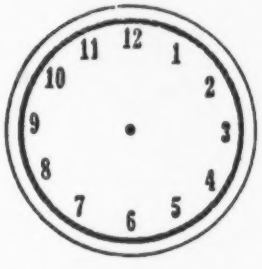
3) 12:15



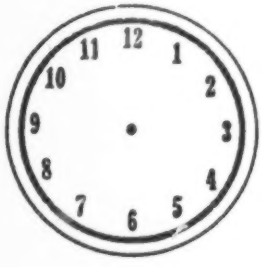
4) 7:05



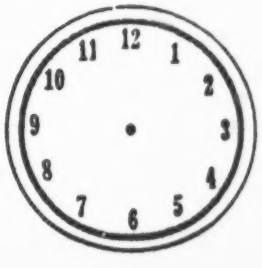
5) 9:20



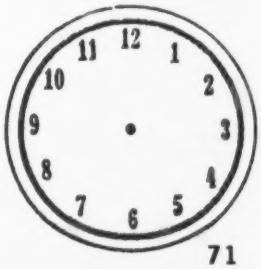
6) 3:35



7) 6:10



8) 1:50



9) 4:15

PART III

DIRECTIONS: Read each clock. Write the time in below each clock.

EXAMPLES:

A)

9:18

B)

1:31

C)

2:57

1)

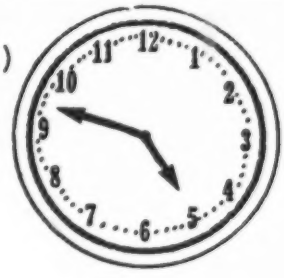
:

2)

:

3)

:

4) 

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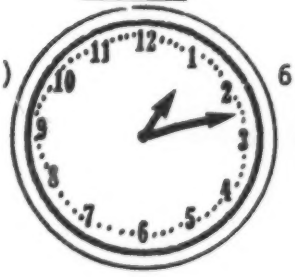
5) 

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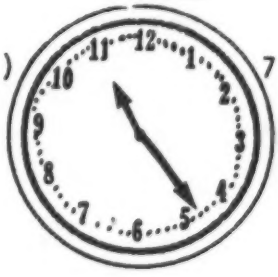
6) 

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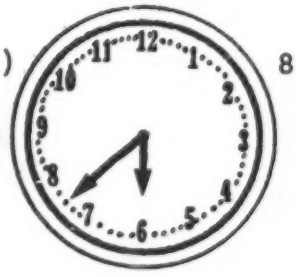
7) 

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8)

:

9)

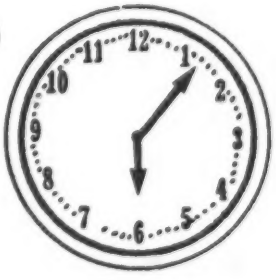
:

10)

:

11)

:

12) 

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OBJECTIVE: To multiply 3-digit numbers by a 1-digit number

EXAMPLE: Jim worked 4 weeks on a job. He made $120 a week. How much did he make?

We could add:

$$\begin{array}{r} \$\ 120 \\ 120 \\ 120 \\ +\ 120 \\ \hline \$\ 480 \end{array}$$

Or we could multiply: Start with ones.

ones	tens	hundreds
$\$\ 1\ 2\ 0$	$\$\ 1\ 2\ 0$	$\$\ 1\ 2\ 0$
$\times\ 4$	$\times\ 4$	$\times\ 4$
0	$8\ 0$	$\$\ 4\ 8\ 0$
ones	tens	hundreds

If Jim had all the money together, he could have

_____ $100 bills, ____ $10 bills, and _____ $1 bills.

DIRECTIONS: Multiply. Use your times table if you need it. The first one has been done.

1) $\begin{array}{r} 7\ 0\ 3 \\ \times\ 2 \\ \hline 1\ 4\ 0\ 6 \end{array}$

2) $\begin{array}{r} 1\ 2\ 4 \\ \times\ 2 \\ \hline \end{array}$

3) $\begin{array}{r} 5\ 3\ 0 \\ \times\ 3 \\ \hline \end{array}$

4) $\begin{array}{r} 8\ 4\ 1 \\ \times\ 2 \\ \hline \end{array}$

5) $\begin{array}{r} 912 \\ \times\ 4 \\ \hline \end{array}$

6) $\begin{array}{r} 637 \\ \times\ 1 \\ \hline \end{array}$

7) $\begin{array}{r} 928 \\ \times\ 0 \\ \hline \end{array}$

8) $\begin{array}{r} 710 \\ \times\ 5 \\ \hline \end{array}$

9) $\begin{array}{r} 802 \\ \times\ 4 \\ \hline \end{array}$

10) $\begin{array}{r} 211 \\ \times\ 9 \\ \hline \end{array}$

11) $\begin{array}{r} 140 \\ \times\ 2 \\ \hline \end{array}$

12) $\begin{array}{r} 501 \\ \times\ 6 \\ \hline \end{array}$

13) $\begin{array}{r} 600 \\ \times\ 7 \\ \hline \end{array}$

14) $\begin{array}{r} 823 \\ \times\ 3 \\ \hline \end{array}$

15) $\begin{array}{r} 987 \\ \times\ 1 \\ \hline \end{array}$

16) $\begin{array}{r} 734 \\ \times\ 2 \\ \hline \end{array}$

17) $\begin{array}{r} 612 \\ \times\ 3 \\ \hline \end{array}$

18) $\begin{array}{r} 431 \\ \times\ 2 \\ \hline \end{array}$

19) $\begin{array}{r} 901 \\ \times\ 8 \\ \hline \end{array}$

20) $\begin{array}{r} 723 \\ \times\ 1 \\ \hline \end{array}$

OBJECTIVE: To multiply by a 1-digit number, with renaming

Step 1: Multiply 6 x 2 = 12. Write the 2 in the ones place and carry the 1 to the tens place.

$$\begin{array}{r} {\scriptstyle 1} \\ 46 \\ \times\ 2 \\ \hline 2 \end{array}$$

Step 2: Multiply 4 x 2 = 8. Add the 1 that was carried to make 9.

$$\begin{array}{r} {\scriptstyle 1} \\ 46 \\ \times\ 2 \\ \hline 92 \end{array}$$

Check by adding

$$\begin{array}{r} {\scriptstyle 1} \\ 46 \\ +\ 46 \\ \hline 92 \end{array}$$

DIRECTIONS: Multiply. Use your times table if you need it. The first one has been done.

1. $\begin{array}{r} {\scriptstyle 1} \\ 29 \\ \times\ 2 \\ \hline 58 \end{array}$

2) $\begin{array}{r} 76 \\ \times\ 5 \\ \hline \end{array}$

3) $\begin{array}{r} 64 \\ \times\ 3 \\ \hline \end{array}$

4) $\begin{array}{r} 18 \\ \times\ 2 \\ \hline \end{array}$

5) $\begin{array}{r} 58 \\ \times\ 3 \\ \hline \end{array}$

OBJECTIVE: To multiply by a 1-digit number, with renaming

DIRECTIONS: Multiply. The first one has been done.

1) $\overset{2}{45} \times 4 = 180$

2) $39 \times 8 =$

3) $27 \times 9 =$

4) $56 \times 7 =$

5) $49 \times 9 =$

6) $92 \times 6 =$

7) $73 \times 8 =$

8) $37 \times 4 =$

9) $66 \times 6 =$

10) $24 \times 5 =$

11) $84 \times 7 =$

12) $94 \times 6 =$

13) $73 \times 5 =$

14) $83 \times 8 =$

15) $64 \times 4 =$

16) $98 \times 2 =$

17) $65 \times 9 =$

18) $36 \times 4 =$

19) $16 \times 4 =$

20) $72 \times 8 =$

21) 14 x 5	22) 86 x 9	23) 47 x 6	24) 35 x 4	25) 58 x 7
26) 16 x 8	27) 74 x 7	28) 55 x 6	29) 37 x 9	30) 84 x 3
31) 15 x 7	32) 88 x 4	33) 38 x 2	34) 46 x 6	35) 29 x 3
36) 77 x 8	37) 54 x 6	38) 22 x 8	39) 14 x 3	40) 57 x 4

41) 38 x 9	42) 27 x 3	43) 89 x 6	44) 48 x 3	45) 17 x 5
46) 99 x 5	47) 75 x 5	48) 12 x 6	49) 13 x 4	50) 59 x 2
51) 67 x 9	52) 15 x 2	53) 18 x 3	54) 24 x 7	55) 25 x 3
56) 17 x 8	57) 99 x 9	58) 87 x 9	59) 23 x 4	60) 52 x 9

OBJECTIVE: To find products when a 2-digit factor is multiplied by a 2-digit factor

Here is a multiplication problem:

$$\begin{array}{r} 48 \\ \times 23 \\ \hline \end{array}$$

> We could add 48 23 times, but it would take too much time.

Here is how we multiply by a 2-digit factor.

STEP 1: Multiply 8 x 3 = 24. Write the 4 in the ones place and carry the 2 to the tens place.

$$\begin{array}{r} {\scriptstyle 2} \\ 48 \\ \times\ 23 \\ \hline 4 \end{array}$$

STEP 2: Multiply 4 x 3 = 12. Add the 2 that was carried to make 14.

$$\begin{array}{r} {\scriptstyle 2} \\ 48 \\ \times\ 23 \\ \hline 144 \end{array}$$

STEP 3: Multiply 2 x 8 = 16. Write the 6 in the tens place below the 4 and carry the 1.

$$\begin{array}{r} {\scriptstyle 1} \\ {\scriptstyle 2} \\ 48 \\ \times\ 23 \\ \hline 144 \\ 6 \end{array}$$

STEP 4: Multiply 2 x 4 = 8. Add the 1 that was carried to make 9.

$$\begin{array}{r} {\scriptstyle 1} \\ {\scriptstyle 2} \\ 48 \\ \times\ 23 \\ \hline 144 \\ 96 \end{array}$$

STEP 5: Draw a line and add.

$$\begin{array}{r} 48 \\ \times\ 23 \\ \hline 144 \\ 96 \\ \hline 1{,}104 \end{array}$$

Multiplying by a 2-digit Factor

DIRECTIONS: Multiply. The first one is done. Put the comma in at the last step.

1) 97 × 85 = 485 + 776 = 8,245

2) 43 × 17

3) 56 × 29

4) 18 × 56

5) 39 × 74

6) 60 × 89

7) 22 × 38

8) 87 × 62

9) 28 × 45

10) 54 × 13

11) 87 × 23

12) 67 × 12

13) 49 × 61

14) 34 × 75

15) 19 × 19

16) 26 x 30

17) 83 x 74

18) 37 x 98

19) 67 x 49

20) 13 x 15

21) 75 x 34

22) 52 x 62

23) 98 x 70

24) 16 x 34

25) 44 x 82

26) 39 x 16

27) 58 x 21

28) 75 x 43

29) 19 x 42

30) 65 x 27

OBJECTIVE: To solve multiplication problems with 2 and 3 digit factors

TAKING A HIGHER STEP IN MULTIPLICATION

Find the product of

$$\begin{array}{r} 375 \\ \times\ 26 \\ \hline ? \end{array}$$

Step 1: Multiply 6 x 5 = 30. Write the (0) in the ones place and carry the (3) to the tens place.

$$\begin{array}{r} {\scriptstyle 3} \\ 375 \\ \times\ 26 \\ \hline 0 \end{array}$$

Step 2: Multiply 6 x 7 = 42. Add the 3 that was carried to make 45. Write the 5 in the tens place and carry the 4 to the hundreds place.

$$\begin{array}{r} {\scriptstyle 43} \\ 375 \\ \times\ 26 \\ \hline 50 \end{array}$$

Step 3: Multiply 6 x 3 = 18. Add the 4 that was carried to make 22.

$$\begin{array}{r} {\scriptstyle 43} \\ 375 \\ \times\ 26 \\ \hline 2250 \end{array}$$

Step 4: Multiply 2 x 5 = 10. Write the 0 in the tens place below the 5. Carry the 1 to the next place in the top factor.

$$\begin{array}{r} {\scriptstyle 1} \\ 375 \\ \times\ 26 \\ \hline 2250 \\ 0 \end{array}$$

Step 5: Multiply 2 x 7 = 14. Add the 1 that was carried to make 15. Write the 5 under the 2. Carry the 1 to the next place in the top factor.

$$\begin{array}{r} {\scriptstyle 11} \\ 375 \\ \times\ 26 \\ \hline 2250 \\ 50 \end{array}$$

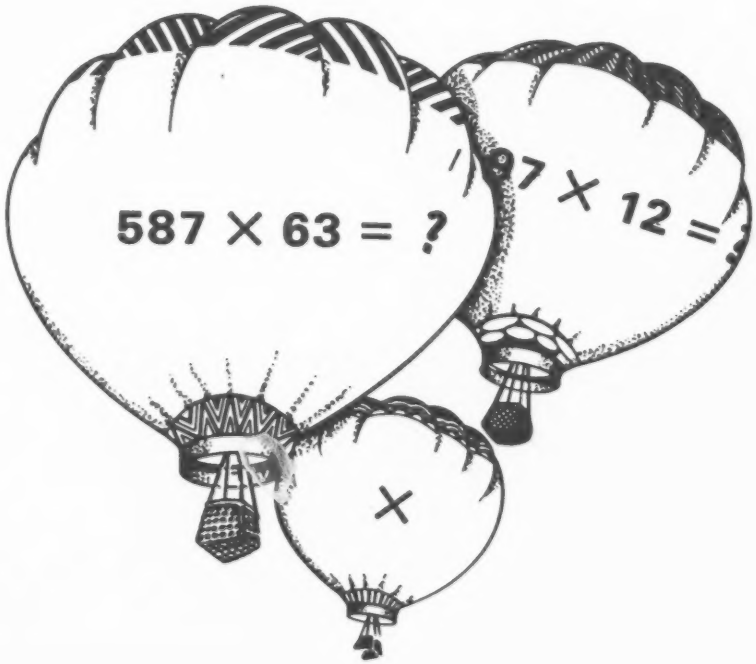
Continued on next page

Step 6: Multiply 3 x 2 = 6. Add the 1 that was carried to make 7.

```
  11
 375
x 26
2250
750
```

Step 7: Add 2250 + 750 =

```
 375
x 26
2250
+ 750
9,750
```



PART I

DIRECTIONS: Multiply the following.

1) 43 x 41	2) 76 x 32	3) 58 x 59	4) 87 x 34
5) 57 x 72	6) 96 x 42	7) 14 x 66	8) 47 x 65
9) 19 x 16	10) 80 x 79	11) 825 x 26	12) 337 x 42
13) 284 x 59	14) 613 x 27	15) 985 x 83	16) 151 x 24
17) 266 x 24	18) 482 x 77	19) 352 x 42	20) 512 x 39

92

PART II

DIRECTIONS: Multiply the following.

EXAMPLE: To multiply number sentences, rewrite the problem to make it easier to solve.

106 x 89 = Can be rewritten as 106
x 89

1) 94 x 37 = 2) 87 x 35 = 3) 17 x 83 = 4) 23 x 14 =

5) 11 x 15 = 6) 34 x 17 = 7) 54 x 12 = 8) 34 x 39 =

9) 31 x 10 = 10) 13 x 18 = 11) 39 x 30 = 12) 10 x 13 =

13) 862 x 47 = 14) 747 x 47 = 15) 344 x 58 = 16) 110 x 18 =

17) 248 x 39 = 18) 475 x 24 = 19) 593 x 64 = 20) 621 x 81 =

21) 166 x 45 = 22) 241 x 10 = 23) 241 x 15 = 24) 373 x 36 =

25) 406 x 97 =

SOLVE IT

Warren worked 56 hours a week for a total of 9 weeks. How many hours did he work in 9 weeks?

56 x 9 = 56
x 9
?

OBJECTIVE: To write dollar amounts in words

USING MONEY

If we have seven dollars even, we can write:

seven dollars = $7

Or, to show there are no cents, we can write:

seven dollars = $7.00

The decimal point (.) shows that the dollars are on the left, and the cents are on the right.

Suppose we have $7.32

We read this: "Seven dollars and thirty-two cents."

(Notice that we say **AND** at the decimal point.)

DIRECTIONS: Write the amounts in words.

EXAMPLE 1:	$4.68	=	*Four dollars and sixty-eight cents*
EXAMPLE 2:	$123.00	=	*One hundred twenty-three dollars*

1) $3.39 = _____

2) $401.07 = _____

3) $25.14 = _____

4) $2.06 = _____

5) $17.95 = _____

6) $200.69 = _____

7) $87.50 = _____

8) $10.47 = _____

9) $9.23 = _____

OBJECTIVE: To multiply using dollar amounts

MULTIPLYING MONEY

If we have even money, multiplying it is easy.

Example 1: $30 x 2 = $60

But suppose we have dollars and cents.
That is easy too. We just multiply as always. Then at the end, we write our dollar sign on the left. We count two digits from the right and put the decimal point to show the cents.

Example 2: Three shirts at $14.95 each.

$$\begin{array}{r} \$\ 1\ 4\ .\ 9\ 5 \\ \times \quad\quad 3 \\ \hline 4\ 4\ \quad 8\ 5 \end{array}$$

Multiply. ——————————→ 44 85

Write $ and the decimal point. ——————→ $44.85

Check by adding:

$$\begin{array}{r} \$\ 1\ 4\ .\ 9\ 5 \\ 1\ 4\ .\ 9\ 5 \\ \underline{1\ 4\ .\ 9\ 5} \end{array}$$

Did you get the same amount? _____

DIRECTIONS: Multiply these money amounts.

1) $6.50 x 4

2) $3.25 x 6

3) $9.07 x 8

4) $12.82 x 5

5) $26.69 x 7

6) $17.75 x 3

OBJECTIVE: To solve word problems

DIRECTIONS: Solve the word problems below.

1. Pauline makes extra money for Christmas by making fabric picture frames. She sells these for $8 each. If she makes 34 frames this season, how much will she earn?

2. Richard has 3 daughters, Beth, Susan, and Lisa. He has one son, Rick. Rick has 2 children. Susan and Lisa have 3 children each, and Beth has 1 child. How many grandchildren does Richard have?

3. Larry drives 20 miles to work and 20 miles home 5 days each week. How many miles does he travel each week?

4. A sign in a store window says "Davis Brothers -- Since 1957." How many years has the store been open?

5. Theresa wanted to know how much time she spent on housekeeping each day. She timed each task and wrote:

Washing dishes	10 minutes	Preparing dinner	25 minutes
Watering plants	5 minutes	Dusting & sweeping	10 minutes

How much time does she spend each day?

6. Last year, Wanda owed $253 on her charge account. This year she owes only $87. How much has she paid over the past year?

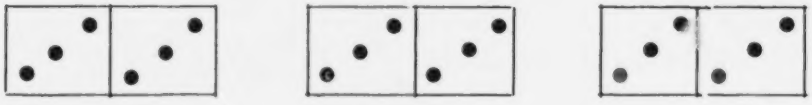
7. Jim jogs 2 miles in the park 5 days a week, and 5 miles on Saturday. How many miles does he jog each week?

8. Darlene has $250 in her savings account. She adds $20 to her account each week. How much will she have in 6 weeks?

OBJECTIVE: To demonstrate the concept of division

DIVISION AND MULTIPLICATION

Division is the opposite of multiplication. Multiplication is adding by groups.



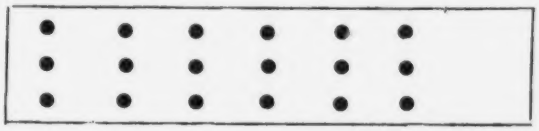
3 + 3 + 3 + 3 + 3 + 3 = 18

or

What will 6 groups of 3 equal?

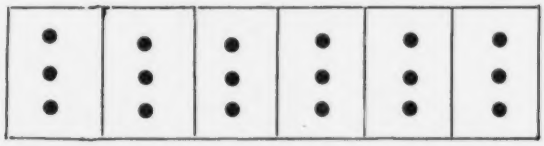
6 x 3 = 18

Division does <u>not</u> put groups together. It splits numbers into groups.



= 18

How many groups of 3 are in 18?



= 18

3 3 3 3 3 3 = 6 groups of 3's

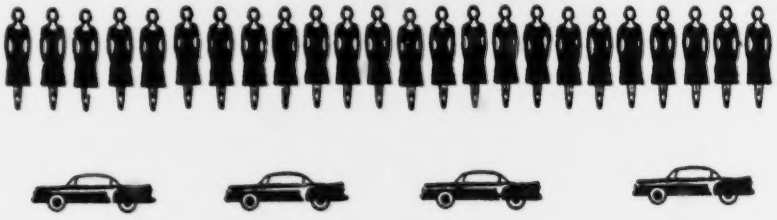
When multiplying we found, 6X3=18.

When dividing we found, $3\overline{)18}$ 6.

97

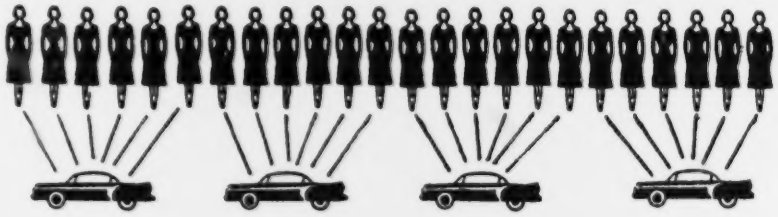
WHEN DO WE DIVIDE?

The choir is going to another church to sing. There are 24 singers. Four people offer to bring their cars. How many will have to go in each car?



One way:

We could keep putting one person in each car until all the singers are in cars.



Another way:

We could ask ourselves:

4 cars x __?__ people = 24 people

Since 4 x 6 = 24, the answer is 6 people.

Another way:

We could think of this as a division problem. Remember, we <u>divided</u> the people up into 4 cars.

So 24 ÷ 4 = _____ this is read, "24 divided by 4"

Or we could write

$4\overline{)\,24}$ This is read, "4 divided into 24"

Both mean the same thing.

OBJECTIVE: To use symbols for division

SYMBOLS FOR DIVISION

EXAMPLE: Since $3 \times 5 = 15$, we can write

$15 \div 3 = 5$ or $3\overline{)15}^{\,5}$

and $15 \div 5 = 3$ or $5\overline{)15}^{\,3}$

A. DIRECTIONS: Practice writing the division facts. The first one is done for you.

1) $2 \times 9 = 18$, so $\underline{18} \div 2 = \underline{9}$ and $\underline{2})\overline{18}^{\,9}$

also $\underline{18} \div 9 = \underline{2}$ and $\underline{9})\overline{18}^{\,2}$

2) $1 \times 17 = 17$, so $17 \div 1 =$ ___ and $1)\overline{\quad}^{\,17}$

also $17 \div 17 = 1$ and $17)\overline{17}$

3) $3 \times 3 = 9$, so $9 \div 3 =$ ___ and $3)\overline{9}$

4) $2 \times 8 = 16$, so ___ $\div 2 = 8$ and ___$)\overline{16}$

also $16 \div$ ___ $= 2$ and $8)\overline{\quad}^{\,2}$

There is still yet another way you will see division problems. Most typewriters do not have the two division symbols we used.

So instead of $8 \div 4$ they write $8/4$

or $\frac{8}{4}$

Both of these are also read "8 divided by 4"

B. DIRECTIONS: Divide. Use your multiplication table if you need it.

1) $5 \div 1 =$ _____ 2) $\frac{6}{2}$ 3) $2\overline{)8}$ 4) $10 \div 2 =$ ___

5) $12/2 =$ _____ 6) $1\overline{)6}$ 7) $16 \div 4 =$ _____ 8) $3\overline{)6}$

OBJECTIVE: To use multiplication and division facts

MULTIPLICATION AND DIVISION

Every multiplication fact has 2 related division facts.

$$2 \times 5 = 10$$

So $10 \div 5 = 2$

and $10 \div 2 = 5$

A. DIRECTIONS: Write the related facts.

1. If $3 \times 2 = 6$, then $6 \div \underline{2} = ___$ and $6 \div \underline{3} = ___$

2. If $1 \times 8 = 8$ then $8 \div ___ = ___$ and $8 \div ___ = ___$

3. Multiplication Fact:
   Division Facts:

   $3 \times 4 = 12$

   a) _____

   b) _____

4. Division Fact:
   Multiplication Facts:

   $14 \div 2 = 7$

   a) _____

   b) _____

B. **DIRECTIONS:** For each multiplication fact, write two division facts. The first one has been done.

1) 2 x 4 = 8, so 8 ÷ 4 = 2 and 8 ÷ 2 = 4

2) 3 x 2 = 6, so _____ and _____

3) 1 x 5 = 5, so _____ and _____

4) 3 x 8 = 24, so _____ and _____

5) 3 x 7 = 21, so _____ and _____

C. **DIRECTIONS:** For each division fact, write two multiplication facts. The first one has been done.

1) 20 ÷ 5 = 4, so 4 x 5 = 20 and 5 x 4 = 20

2) 6 ÷ 3 = 2, so _____ and _____

3) 10 ÷ 2 = 5, so _____ and _____

4) 9 ÷ 3 = 3, so _____ and _____

5) 12 ÷ 2 = 6, so _____ and _____

OBJECTIVE: To solve problems using multiplication and division facts

PART I

For each multiplication fact there is a division fact. Look at the table below. It is both a multiplication table and a division table.

× / ÷	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	34	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

To multiply, find one number along the top row. Then find the other number along the side row. Follow both rows to where they meet.

4 x 3 = 12

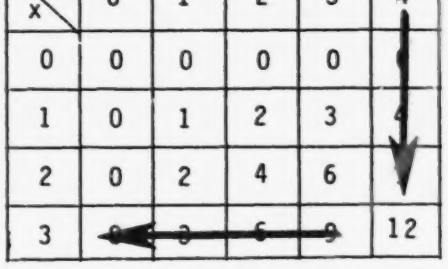
× / ÷	0	1	2	3	4
0	0	0	0	0	0
1	0	1	2	3	4
2	0	2	4	6	8
3	0	3	6	9	12

1. Look along the top row. Find the number you are dividing by.
2. Follow that row straight down until you find the number you are dividing into.
3. Then follow the row across to the first column on the left.

   That number is your answer.

$$4\overline{)12}\quad 3$$

x ÷	0	1	2	3	4
0	0	0	0	0	0
1	0	1	2	3	4
2	0	2	4	6	8
3	0	3	6	9	12



Contributed by
Martha Murray,
Training Specialist

PART II

DIRECTIONS: Solve these.

EXAMPLES: $9\overline{)72}^{?}$ If you know your multiplication facts, you also know your division facts. Study these facts:

$\begin{array}{r} 9 \\ \times\ 8 \\ \hline 72 \end{array}$ and $\begin{array}{r} 8 \\ \times\ 9 \\ \hline 72 \end{array}$ so $9\overline{)72}^{8}$ and $8\overline{)72}^{9}$

$\begin{array}{r} 9 \\ \times\ 4 \\ \hline 36 \end{array}$ and $\begin{array}{r} 4 \\ \times\ 9 \\ \hline 36 \end{array}$ so $9\overline{)36}^{4}$ and $4\overline{)36}^{9}$

$\begin{array}{r} 5 \\ \times\ 2 \\ \hline 10 \end{array}$ and $\begin{array}{r} 2 \\ \times\ 5 \\ \hline 10 \end{array}$ so $5\overline{)10}^{2}$ and $2\overline{)10}^{5}$

1) $\begin{array}{r} 8 \\ \times\ 7 \\ \hline 56 \end{array}$ $8\overline{)56}$ $7\overline{)56}$

2) $\begin{array}{r} 6 \\ \times\ 4 \\ \hline 24 \end{array}$ $6\overline{)24}$ $4\overline{)24}$

3) $\begin{array}{r} 3 \\ \times\ 5 \\ \hline 15 \end{array}$ $3\overline{)15}$ $5\overline{)15}$

4) $\begin{array}{r} 2 \\ \times\ 5 \\ \hline 10 \end{array}$ $2\overline{)10}$ $5\overline{)10}$

5) $\begin{array}{r} 9 \\ \times\ 6 \\ \hline 54 \end{array}$ $9\overline{)54}$ $6\overline{)54}$

6) $\begin{array}{r} 4 \\ \times\ 3 \\ \hline 12 \end{array}$ $4\overline{)12}$ $3\overline{)12}$

7) $\begin{array}{r} 8 \\ \times\ 6 \\ \hline 48 \end{array}$ $8\overline{)48}$ $6\overline{)48}$

8) $\begin{array}{r} 7 \\ \times\ 4 \\ \hline 28 \end{array}$ $7\overline{)28}$ $4\overline{)28}$

9) $\begin{array}{r} 6 \\ \times\ 2 \\ \hline 12 \end{array}$ $6\overline{)12}$ $2\overline{)12}$

10) $\begin{array}{r} 5 \\ \times\ 9 \\ \hline 45 \end{array}$ $5\overline{)45}$ $9\overline{)45}$

11) $\begin{array}{r} 4 \\ \times\ 8 \\ \hline 32 \end{array}$ $4\overline{)32}$ $8\overline{)32}$

12) $\begin{array}{r} 7 \\ \times\ 6 \\ \hline 42 \end{array}$ $7\overline{)42}$ $6\overline{)42}$

PART III

DIRECTIONS: Fill in the missing number.

1) $7 \times \square = 63$

2) $6 \overline{)\square}$

3) $\square \times 4 = 32$

4) $\square \overline{)35}$ (5)

5) $\square \overline{)8}$ (4)

6) $\square \overline{)16}$ (4)

7) $8 \times \square = 64$

8) $\square \overline{)27}$ (3)

9) $\square \overline{)10}$ (2)

10) $\square \overline{)72}$ (9)

11) $8 \times \square = 40$

12) $9 \overline{)\square}$ (4)

13) $\square \overline{)15}$ (5)

14) $9 \times \square = 18$

15) $\square \times 6 = 24$

16) $7 \times 5 = \square$

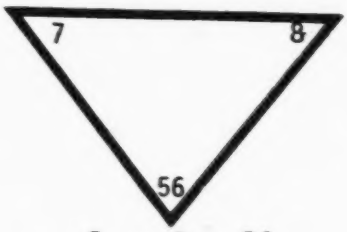
17) $\square \times 7 = 7$

18) $\square \overline{)81}$ (9)

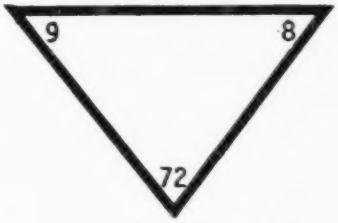
19) $8 \overline{)\square}$ (6)

20) $4 \times \square = 12$

EXAMPLES: Study these examples to see how to make four number sentences from the three numbers in each drawing.



7 x 8 = 56
8 x 7 = 56
56 ÷ 7 = 8
56 ÷ 8 = 7

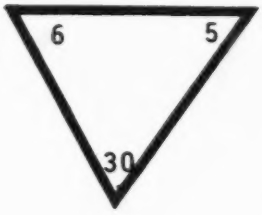


9 x 8 = 72
8 x 9 = 72
72 ÷ 9 = 8
72 ÷ 8 = 9

PART IV

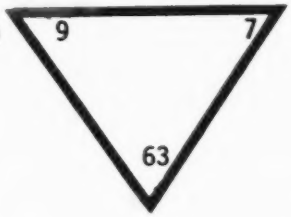
DIRECTIONS: Write four number sentences and answers for each drawing below.

1)



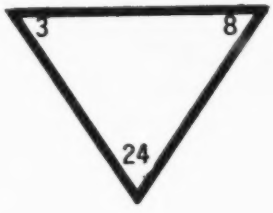
____ x ____ = ____
____ x ____ = ____
____ ÷ ____ = ____
____ ÷ ____ = ____

2)



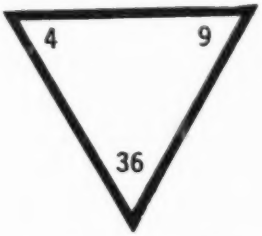
____ x ____ = ____
____ x ____ = ____
____ ÷ ____ = ____
____ ÷ ____ = ____

3)



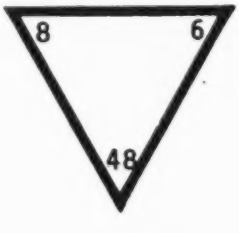
____ x ____ = ____
____ x ____ = ____
____ ÷ ____ = ____
____ ÷ ____ = ____

4)



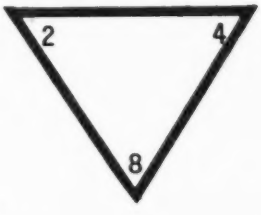
____ x ____ = ____
____ x ____ = ____
____ ÷ ____ = ____
____ ÷ ____ = ____

5)



____ x ____ = ____
____ x ____ = ____
____ ÷ ____ = ____
____ ÷ ____ = ____

6)



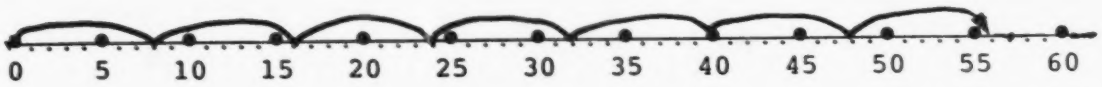
____ x ____ = ____
____ x ____ = ____
____ ÷ ____ = ____
____ ÷ ____ = ____

OBJECTIVE: To use basic division facts for numerals 0-10

PART I

DIRECTIONS: Use a number line to solve the following facts.

EXAMPLE: Division is a repeat of subtraction. If you have problems recalling your division facts, you can use a number line to help you. Here is how it works. You may want to know how many 8's there are in 56. You can subtract 8's from 56 and count how many 8's were subtracted. Study the example: 56 ÷ 8 = ?



$56 - (8+8+8+8+8+8+8) = 0$ $\quad 56 \div 8 = 7$

1) $2\overline{)18}$ 2) $5\overline{)5}$ 3) $1\overline{)2}$ 4) $0\overline{)8}$ 5) $3\overline{)6}$

6) $0\overline{)3}$ 7) $9\overline{)36}$ 8) $8\overline{)64}$ 9) $5\overline{)35}$ 10) $4\overline{)24}$

11) $4\overline{)12}$ 12) $6\overline{)48}$ 13) $9\overline{)54}$ 14) $8\overline{)32}$ 15) $5\overline{)25}$

16) $3\overline{)18}$ 17) $5\overline{)10}$ 18) $1\overline{)6}$ 19) $7\overline{)49}$ 20) $9\overline{)18}$

21) $8\overline{)72}$ 22) $3\overline{)15}$ 23) $9\overline{)0}$ 24) $6\overline{)30}$ 25) $3\overline{)27}$

26) $5\overline{)40}$ 27) $2\overline{)12}$ 28) $9\overline{)81}$ 29 $8\overline{)48}$ 30) $9\overline{)45}$

31) $2\overline{)16}$ 32) $7\overline{)14}$ 33) $4\overline{)20}$ 34) $3\overline{)9}$ 35) $7\overline{)56}$

PART II

DIRECTIONS: Divide the top numbers by the numbers on the side. Then fill in the boxes.

TIC TAC TOE IN DIVISION

EXAMPLES:

÷	32	24
8	4	3
4	8	6

$8\overline{)32}$ 4 $\quad$ $8\overline{)24}$ 3

$4\overline{)32}$ 8 $\quad$ $4\overline{)24}$ 6

The top numbers are the numbers you are dividing into.

The side numbers are the numbers you are dividing by.

1)

÷	6	12
2		
3		

2)

÷	18	9
3		
9		

3)

÷	10	20
5		
2		

4)

÷	24	48
8		
6		

5)

÷	36	54
9		
6		

6)

÷	12	18
6		
2		

7)

÷	27	18
9		
3		

8)

÷	16	24
8		
4		

9)

÷	40	50
5		
10		

OBJECTIVE: To solve division number sentences using numerals 0-10

EXAMPLE:

$6\overline{)30}$ (quotient: 5) and $30 \div 6 = 5$

They both mean the same thing. There are 5 groups of 6 in 30. The parts of a division problem are:

divisor → 6) 30 ← dividend, 5 ← quotient

30 ÷ 6 = 5 ← quotient (divisor: 6; dividend: 30)

DIRECTIONS: Solve each of the following.

1) 20 ÷ 4 = _____	16) 10 ÷ 5 = _____	31) 40 ÷ 5 = _____
2) 16 ÷ 4 = _____	17) 81 ÷ 9 = _____	32) 36 ÷ 9 = _____
3) 27 ÷ 9 = _____	18) 12 ÷ 4 = _____	33) 49 ÷ 7 = _____
4) 42 ÷ 6 = _____	19) 42 ÷ 7 = _____	34) 18 ÷ 6 = _____
5) 15 ÷ 3 = _____	20) 24 ÷ 8 = _____	35) 14 ÷ 7 = _____
6) 40 ÷ 8 = _____	21) 21 ÷ 3 = _____	36) 16 ÷ 8 = _____
7) 54 ÷ 6 = _____	22) 30 ÷ 5 = _____	37) 20 ÷ 5 = _____
8) 18 ÷ 3 = _____	23) 36 ÷ 6 = _____	38) 12 ÷ 6 = _____
9) 6 ÷ 2 = _____	24) 72 ÷ 9 = _____	39) 14 ÷ 2 = _____
10) 9 ÷ 3 = _____	25) 64 ÷ 8 = _____	40) 27 ÷ 3 = _____
11) 36 ÷ 4 = _____	26) 18 ÷ 2 = _____	41) 54 ÷ 9 = _____
12) 10 ÷ 2 = _____	27) 25 ÷ 5 = _____	42) 30 ÷ 6 = _____
13) 24 ÷ 6 = _____	28) 24 ÷ 4 = _____	43) 21 ÷ 7 = _____
14) 18 ÷ 9 = _____	29) 16 ÷ 2 = _____	44) 24 ÷ 3 = _____
15) 12 ÷ 3 = _____	30) 12 ÷ 2 = _____	45) 72 ÷ 8 = _____

OBJECTIVE: To solve problems using tables and charts

ORGANIZING INFORMATION

We can make tables and charts of our own to solve problems.

A. A church group wanted to rent a bus to go on a retreat. They found that it would cost a "flat fee" of $50 plus $1.00 a mile. The round trip will be 370 miles. How much will the bus cost?

Solution: We can make a chart to help us find out. "Flat fee" means we pay even if we don't drive the bus anywhere. Fill in the chart for the miles given.

Miles	Cost for miles	+ Flat fee	= Total Cost
0	$0	$50	$50
1	$1	$50	$51
2			
10			
100			
370			

B. The Wilson family went out to eat. Three ordered hamburgers and French fries, at $3.50 each. Two got fish sandwiches at $2.75 each. Mr Wilson ordered a steak for $7.95. What was the total cost?

One way to solve this is to organize the facts into a chart.

Hamburgers and fries	Fish sandwiches	Steak

_____ + _____ + _____ = **Total**

Add the columns and fill in the blanks. Then write the sums here, lining up the decimal points. Then add.

Hamburgers = _____
Fish = _____
Steak = _____

Total = _____

GETTING THE FACTS STRAIGHT

C. Here are some problems. There is room for you to organize the facts into a chart or table. Then solve.

1. You can rent a car at a flat rate of $12 per day plus 10 cents a mile ($.10 a mile) if you buy your own gas. How much would it cost to keep the car 3 days and drive a total of 120 miles?

2. The workers on the evening shift ordered supper from the sandwich truck. Two wanted ham and cheese sandwiches at $1.75 each, 4 wanted pizzaburgers at $3.00 each, and 3 wanted tuna sandwiches at $1.50 each. Everyone ordered coffee at $.50 each. How much was the total bill?

3. A movie theater has two aisles. In each row there are 8 seats on the sides of the aisles and 12 seats in the middle. If there are 20 rows in the theater, how many people can be seated? (Hint: Try drawing the picture first.)

4. Six friends are going to the museum. They all need bus fare of $1 each way, and $2 for admission. They decide to bring along $5 each for souvenirs. How much will they need altogether?

OBJECTIVE: To solve 1 digit divisor problems with 2 digit quotients without remainders

TAKING A HIGHER STEP IN DIVISION

Step 1: Divide
$8 \div 4 = 2$. Place the 2 above the 8 in the dividend.

$$4\overline{)\,84}\quad \text{(2 above the 8)}$$

Step 2: Multiply
$4 \times 2 = 8$. Place the 8 under the 8 in the dividend.

$$\begin{array}{r} 2 \\ 4\overline{)\,84} \\ 8 \end{array}$$

Step 3: Subtract
$8 - 8 = 0$. Write the 0 under the 8-8.

$$\begin{array}{r} 2 \\ 4\overline{)\,84} \\ -8 \\ \hline 0 \end{array}$$

Step 4: Bring down the 4 that is in the dividend and repeat the process again.

$$\begin{array}{r} 2 \\ 4\overline{)\,84} \\ -8 \\ \hline 04 \end{array}$$

Step 5: Divide
$4 \div 4 = 1$. Place the 1 above the 4 in the dividend.

$$\begin{array}{r} 21 \\ 4\overline{)\,84} \\ -8 \\ \hline 04 \end{array}$$

Step 6: Multiply
$4 \times 1 = 4$. Place the 4 under the 4 that was brought down.

$$\begin{array}{r} 21 \\ 4\overline{)\,84} \\ -8 \\ \hline 04 \\ 4 \end{array}$$

Step 7: Subtract
$4 - 4 = 0$. The answer is 21.

$$\begin{array}{r} 21 \\ 4\overline{)\,84} \\ -8 \\ \hline 04 \\ -4 \\ \hline 0 \end{array}$$

112

PART I

DIRECTIONS: Solve the following.

1) $3\overline{)69}$

2) $2\overline{)46}$

3) $5\overline{)55}$

4) $4\overline{)48}$

5) $2\overline{)84}$

6) $3\overline{)93}$

7) $2\overline{)42}$

8) $4\overline{)84}$

9) $2\overline{)64}$

10) $4\overline{)88}$

11) $3\overline{)96}$

12) $5\overline{)255}$

13) $9\overline{)819}$

14) $5\overline{)405}$

15) $6\overline{)126}$

16) $8\overline{)248}$

17) $3\overline{)186}$

18) $8\overline{)328}$

19) $2\overline{)164}$

20) $3\overline{)153}$

PART II

DIRECTIONS: Match the problems in Column A with the quotients in Column B. Place the letter from Column B in the space next to the problem in Column A. The first one has been done for you.

COLUMN A		COLUMN B
1. 44 ÷ 4 =	h	a. 91
2. 96 ÷ 3 =	_____	b. 63
3. 28 ÷ 2 =	_____	c. 61
4. 48 ÷ 4 =	_____	d. 82
5. 366 ÷ 6 =	_____	e. 14
6. 204 ÷ 4 =	_____	f. 21
7. 819 ÷ 9 =	_____	g. 71
8. 729 ÷ 9 =	_____	h. 11
9. 355 ÷ 5 =	_____	i. 51
10. 368 ÷ 4 =	_____	j. 12
11. 189 ÷ 3 =	_____	k. 81
12. 164 ÷ 2 =	_____	l. 32
13. 105 ÷ 5 =	_____	m. 51
14. 147 ÷ 7 =	_____	n. 21
15. 255 ÷ 5 =	_____	o. 92

OBJECTIVE: To check division with multiplication

CHECKING DIVISION WITH MULTIPLICATION

We know that if $2 \times 3 = 6$, then $2\overline{)6}$ $\quad 3$

We can use this to check division.

EXAMPLE:

$$\begin{array}{rl} & 36 \leftarrow \text{Quotient} \\ \text{Divisor} \rightarrow & 7\overline{)252} \leftarrow \text{Dividend} \end{array}$$

. If the division is correct, then

Divisor	x	Quotient	=	Dividend
7	x	36	=	252

Let's check to see. Multiply: $\begin{array}{r} 36 \\ \times\ 7 \\ \hline \end{array}$ Is it correct? _____

A. DIRECTIONS: Check each division problem. Write YES if correct, NO if not correct. The first one has been done for you.

1) $8\overline{)760}$ $\quad 95$ — Check: Yes

$\begin{array}{r} 95 \\ \times\ 8 \\ \hline 760 \end{array}$

2) $6\overline{)210}$ $\quad 53$ — Check:

$\begin{array}{r} 53 \\ \times\ 6 \\ \hline \end{array}$

3) $9\overline{)1135}$ $\quad 125$ — Check:

4) $7\overline{)196}$ $\quad 28$ — Check:

B. DIRECTIONS: Divide. Then check each quotient by multiplying.

1) $2\overline{)348}$ Check

2) $5\overline{)305}$ Check

3) $4\overline{)292}$ Check

OBJECTIVE: To solve problems using short division

SHORT DIVISION

You have learned how to do "long division." But for easy problems, you don't have to do it the long way.

Example: $4\overline{)84}$

You think: 4 x what is 8? 2

Then: 4 x what is 4? 1

So you just write down the quotient, 21.

DIRECTIONS: Do these by short division if you can. Use the long way only if you need to.

1)	$3\overline{)39}$	2)	$6\overline{)126}$	3)	$7\overline{)77}$	4)	$9\overline{)189}$
5)	$2\overline{)846}$	6)	$4\overline{)48}$	7)	$5\overline{)255}$	8)	$8\overline{)168}$
9)	$2\overline{)186}$	10)	$3\overline{)276}$	11)	$7\overline{)147}$	12)	$6\overline{)246}$
13)	$5\overline{)105}$	14)	$4\overline{)124}$	15)	$2\overline{)482}$	16)	$9\overline{)900}$
17)	$8\overline{)240}$	18)	$1\overline{)789}$	19)	$2\overline{)608}$	20)	$5\overline{)400}$

OBJECTIVE: To solve one-step word problems with addition, subtraction, and multiplication

PART I

DIRECTIONS: The answers to these problems are not important. Draw a picture of how you see the problem in the box on the left. Write the problem in numbers and symbols in the box on the right. The first one has been done for you.

1. Theresa Rossini needs 2 sticks of butter to make her famous cookies. If she doubles the recipe, how many sticks will she need?

Picture	Problem
once twice	2 x 2 = or 2 + 2 =

2. The Sunday paper has 13 sections. Two sections will no longer be printed. Then how many sections will the Sunday paper have?

Picture	Problem

3. Michael Chen bought 5 six-packs of diet soda. How many cans did he have?

Picture	Problem

4. Ernie went to the bank for change for his newsstand. He got one roll of quarters worth $10.00. He also got a roll of nickels for $2.00 and a roll of dimes for $5.00. What was the total amount in change?

Picture	Problem
	117

5. Rochelle bought 3 record albums a month for 5 months. How many albums did she buy?

Picture	Problem

PART II

DIRECTIONS: Solve the following problems.

1. The radios cost $59. The Jacksons bought 3 of them for Christmas gifts. How much did they spend? _____

2. Sylvia read 150 pages on Tuesday, 43 pages on Thursday, and 102 pages on Friday. What was the total number of pages read? _____

3. One dealer had a car on sale for $6,989. Another dealer had a car the same year and make on sale for $6,788. How much would you save buying from the other dealer? _____

4. A full season ticket to White Sox games costs $445. In Hyde Park 55 people bought season tickets. What was the total amount spent on season tickets in Hyde Park? _____

5. It costs 15¢ a page to use the copy machine in the library. Linda Bell has 23 pages. How much will it cost her to make one copy of each page? _____

6. Walt and Juanita paid $450 rent each month. They moved to a cheaper apartment and paid $375 a month. How much less did they pay each month? _____

7. Paper towels were on sale for 69¢ a roll. Mrs. Hutchins bought 5 rolls. How much did they cost? _____

8. The truck driver drove 152 miles one day. He drove 173 miles, 190 miles, and 156 miles during the next 5 days. How many miles did he drive? _____

9. Julio stopped by the store on his way home. He bought a head of lettuce for 49¢ and a can of tuna for 59¢. He also bought a 5 pound bag of grapefruit for 99¢ and a carton of cottage cheese for 79¢. What was the total before tax? _____

10. The landlord replaced 12 stoves in his building. Each stove cost $288. How much did he spend? _____

11. By 1920 women could finally vote in every state. In 1984, a woman ran for Vice President. How many years had passed?

answer _____

12. There were 822 members of the PTA. This year 267 more parents signed up. What is the total number of PTA members?

answer _____

13. Each parade needs 1,257 balloons. There are 7 parades each year. How many balloons should be bought?

answer _____

14. Rick bought a guitar from the pawn shop. It cost $150. A new guitar would have cost $329. How much did he save?

answer _____

15. Grant Towing towed 102 cars a night for 7 nights. How many cars did they tow altogether?

answer _____

16. Mrs. Silva spent $45 to have her hair washed, set and dried. She tipped her stylist $5. She tipped the shampoo girl $1. The stylist's helper got $2. What was the total cost of her new hair style?

answer _____

17. Last year 17,563 people gave blood to the Red Cross. This year 22,062 people gave. How many more gave this year than last?

answer _____

18. O'Conner's Used Book Store has 1,673 books. O'Conner bought 573 more books at an estate sale. Now how many used books does the store have?

answer _____

19. It costs $39 to rent a car for a day. Roberta rented a car for 6 days. What did she pay?

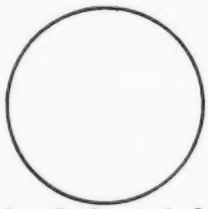
answer _____

20. The Raw Egg Punk Band travels by bus. A bus ticket to their next job costs $85. There are 7 band members. How much will the band pay for bus fare?

answer _____

OBJECTIVE: To recognize 1/2, 1/3, and 1/4 as parts of a whole

EXAMPLES: This circle shows 1 whole. This whole can be divided into parts.



The shaded areas represent 1/2, 1/3 and 1/4 of a whole in each of the circles below. Study each one carefully.

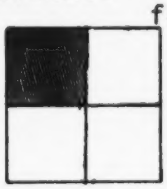
1/2

1/3

1/4

PART I

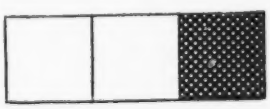
DIRECTIONS: Write the fraction that has been shaded in each of the following shapes.

1) 

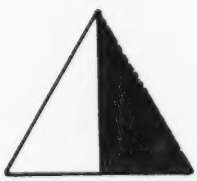
____

2)

____

3) 

____

4) 

____

5)

____

6)

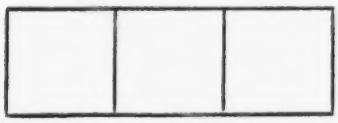
____

PART II

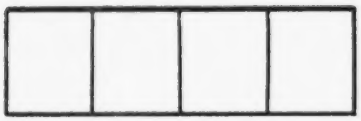
A. Shade in these shapes to show the fraction.

1) 1/2

2) 1/3



3) 1/4



B. Circle the fraction that is bigger.

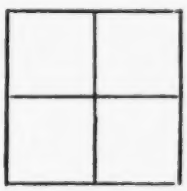
1) $\frac{1}{2}$ or $\frac{1}{3}$ 2) $\frac{1}{4}$ or $\frac{1}{2}$ 3) $\frac{1}{3}$ or $\frac{1}{4}$

C. Circle the fraction that is smaller.

1) $\frac{1}{3}$ or $\frac{1}{2}$ 2) $\frac{1}{3}$ or $\frac{1}{4}$ 3) $\frac{1}{2}$ or $\frac{1}{4}$

D. Shade in these shapes to show the fraction.

1)



1/4

2)

1/2

3)

1/3

4)

1/2

5)

1/4

6)

1/3

7)

1/2

7)

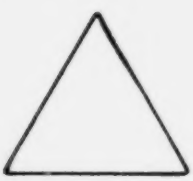
8)

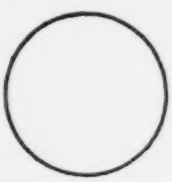
9)

_____ _____ _____

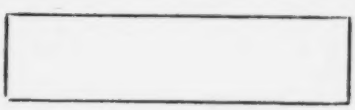
PART III

DIRECTIONS: Shade in these shapes to show the fraction.

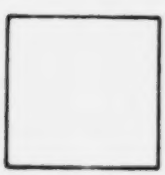
1) 1/2 

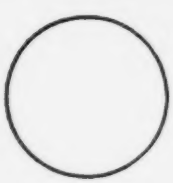
2) 1/4 

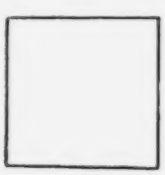
3) 1/3

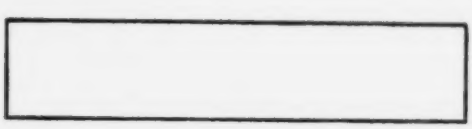
4) 1/2 

5) 1/4

6) 1/2 

7) 1/2 

8) 1/4 

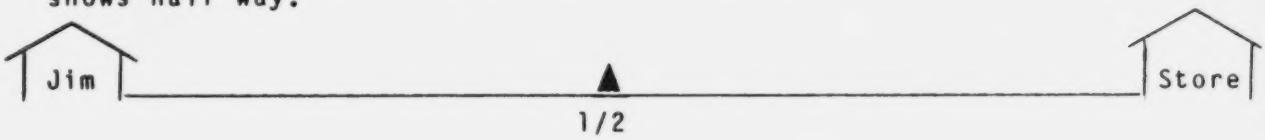
9) 1/4 

10) 1/2

11) 1/3

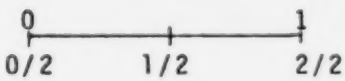
OBJECTIVE: To recognize fractional parts of a distance

The line shows the distance from Jim's house to the store. The marker shows half way.



This line shows the distance from A to B. Put a mark where you think half way is. Label it 1/2.

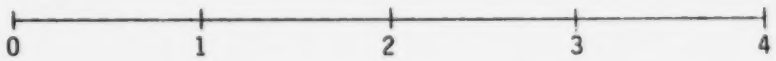
This is a number line. It is like a ruler. The distance from 0 to 1 has been cut in two. Each point has a name. Name them.



2/2 is the same as one whole.

So 2/2 = _____.

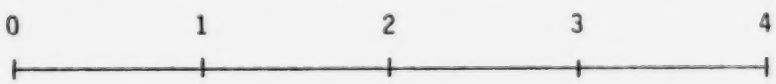
On this number line, mark points half way between each pair of numbers. Label each with 1/2.



Start from the left and count by halves. Touch each point with your pencil and say:

zero
one half
one
one and a half
two
two and a half
three
three and a half
four

Put an a on 1/2, b on 1 1/2, and c on 2 1/2.



OBJECTIVE: To divide by multiples of 10

PART I

DIRECTIONS: Find each quotient.

EXAMPLES:

$$\begin{array}{r} 8 \\ 1\overline{)8} \\ -8 \\ \hline 0 \end{array} \qquad \begin{array}{r} 8 \\ 10\overline{)80} \\ -80 \\ \hline 0 \end{array} \qquad \begin{array}{r} 8 \\ 100\overline{)800} \\ -800 \\ \hline 0 \end{array}$$

1) $20\overline{)80}$ 2) $40\overline{)40}$ 3) $8\overline{)160}$ 4) $60\overline{)180}$

5) $90\overline{)180}$ 6) $70\overline{)420}$ 7) $60\overline{)480}$ 8) $40\overline{)320}$

9) $60\overline{)120}$ 10) $30\overline{)240}$ 11) $90\overline{)810}$ 12) $50\overline{)150}$

13) $90\overline{)630}$ 14) $70\overline{)630}$ 15) $30\overline{)270}$ 16) $80\overline{)400}$

PART II

DIRECTIONS: Find each quotient.

EXAMPLES: A) 80 ÷ 2 = 40 B) 150 ÷ 30 = 5 C) 4,900 ÷ 700 = 7

D) 21,000 ÷ 3,000 = 7 E) 35,000 ÷ 7 = 5,000

1) 60 ÷ 3 = 2) 40 ÷ 4 = 3) 50 ÷ 5 = 4) 90 ÷ 3 =

5) 200 ÷ 4 = 6) 140 ÷ 20 = 7) 100 ÷ 10 = 8) 960 ÷ 30 =

9) 800 ÷ 40 = 10) 360 ÷ 60 = 11) 960 ÷ 80 = 12) 300 ÷ 50 =

13) 210 ÷ 70 = 14) 450 ÷ 90 = 15) 180 ÷ 20 = 16) 210 ÷ 7 =

17) 2,000 ÷ 100 = 18) 5,400 ÷ 600 = 19) 5,600 ÷ 800 =

20) 3,200 ÷ 400 = 21) 3,500 ÷ 500 = 22) 2,800 ÷ 700 =

23) 7,200 ÷ 8 = 24) 81,000 ÷ 90 = 25) 63,000 ÷ 900=

OBJECTIVE: To solve 1 digit divisor problems with 2 digit quotients with remainders

DIRECTIONS: Divide and write the remainders in the quotients.

Example:

$$\begin{array}{r} 34 \text{ r. } 2 \\ 7\overline{)240} \\ -21 \\ \hline 30 \\ -28 \\ \hline 2 \end{array}$$

1) $6\overline{)93}$ 2) $6\overline{)69}$ 3) $4\overline{)75}$ 4) $8\overline{)95}$

5) $3\overline{)49}$ 6) $7\overline{)88}$ 7) $4\overline{)66}$ 8) $5\overline{)74}$

9) $6\overline{)71}$ 10) $8\overline{)83}$ 11) $6\overline{)341}$ 12) $9\overline{)475}$

13) $4\overline{)129}$ 14) $7\overline{)289}$ 15) $8\overline{)354}$ 16) $6\overline{)254}$

OBJECTIVE: To check division by multiplication

CHECKING DIVISION BY MULTIPLICATION

$2\overline{)7}$ = 3 R 1 means

***
**\} 2 sets of 3
* 1 left over (remainder)

$2 \times 3 = 6$
$+ \ 1$
7

We can use this to check division.

EXAMPLE:

Quotient

$7\overline{)257}$ = 36 R5

Divisor — Dividend — Remainder

If the division is correct, then

(Divisor x Quotient) + Remainder = Dividend

(7 x 36) + 5 = 257

Let's check to see. Multiply: 36×7

Then add 5: $+ \ 5$

Is it correct? _____

A. DIRECTIONS: Check each division problem. Write **YES** if correct, **NO** if not correct. The first one has been done.

1) $8\overline{)245}$ = 32 R3

Check: NO

$32 \times 8 = 256$
$+ \ 3$
259

2) $5\overline{)117}$ = 23 R2

Check:

23×5
$+ \ 2$

3) $9\overline{)275}$ = 30 R5

Check:

30×9
$+ \ 5$

B. DIRECTIONS: Divide. Then check by multiplying.

Example:		**Check**	
465 ÷ 9 = ?	9) 4 6 5 r. 6	5 1	Quotient
	-4 5	x 9	Divisor
	1 5	4 5 9	
	- 9	+ 6	Remainder
	6	4 6 5	Dividend

1) 118 ÷ 4 =

2) 332 ÷ 5 =

3) 878 ÷ 9 =

4) 649 ÷ 8 =

5) 739 ÷ 8 =

6) 155 ÷ 2 =

7) 385 ÷ 6 =

8) 142 ÷ 3 =

9) 239 ÷ 4 =

10) 573 ÷ 6 =

OBJECTIVE: To solve 1 digit divisor problems with 3 digit quotients

PART I

DIRECTIONS: Divide.

EXAMPLE:

$$\begin{array}{r} 485 \\ 2\overline{)\,970} \\ -8 \\ \hline 17 \\ -16 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$

1)	$5\overline{)4,935}$	2)	$2\overline{)1,796}$	3)	$2\overline{)482}$	4)	$3\overline{)867}$
5)	$4\overline{)444}$	6)	$5\overline{)655}$	7)	$2\overline{)998}$	8)	$9\overline{)999}$
9)	$3\overline{)372}$	10)	$4\overline{)448}$	11)	$2\overline{)902}$	12)	$8\overline{)904}$
13)	$8\overline{)4,888}$	14)	$5\overline{)3,225}$	15)	$7\overline{)3,577}$	16)	$9\overline{)3,231}$
17)	$6\overline{)1,866}$	18)	$2\overline{)1,998}$	19)	$4\overline{)2,748}$	20)	$6\overline{)3,996}$

PART II

EXAMPLES:	(A) 895 ÷ 5 = 179	(B) 1,888 ÷ 8 = 236
	(C) 4,452 ÷ 7 = 636	(D) 2,096 ÷ 4 = 524

DIRECTIONS: Divide.

1) 552 ÷ 3 =	2) 735 ÷ 5 =	3) 718 ÷ 2 =
4) 861 ÷ 7 =	5) 684 ÷ 6 =	6) 4,059 ÷ 9 =
7) 1,688 ÷ 8 =	8) 936 ÷ 3 =	9) 805 ÷ 7 =
10) 924 ÷ 6 =	11) 708 ÷ 2 =	12) 1,989 ÷ 9 =
13) 939 ÷ 3 =	14) 3,168 ÷ 4 =	15) 6,433 ÷ 7 =
16) 5,994 ÷ 6 =	17) 4,935 ÷ 5 =	18) 2,916 ÷ 9 =
19) 2,748 ÷ 4 =	20) 7,104 ÷ 8 =	21) 5,887 ÷ 7 =

OBJECTIVE: To solve word problems involving the four basic operations

1. Joe planned to barbecue chicken for the family reunion. If one large chicken feeds four people, how many chickens would Joe need to barbecue for 84 family members?

2. Darrell got a raise from $6 per hour to $7 per hour. If he works 40 hours each week, how much more will he make each week?

3. Linda and Louise bought a raffle ticket together. The ticket won a $300 cash prize. How much will Linda and Louise each get?

4. If Joe drives his car at a speed of 50 miles per hour, how long will it take him to drive 250 miles?

5. Everyone at Patricia's office decided to chip in for a birthday gift for her. There were 8 people, and the gift cost $24. How much did each one pay?

6. After 6 friends helped Tony and Debra paint their new apartment, they all ordered a pizza. They cut a large pizza into 24 pieces. How many pieces did each person get?

7. Tom was paid $20 for serving jury duty.

    a. If his jury trial lasted 6 days, how much did he earn?
    b. If the court pays out $1860 each day to jurors like Tom, how many jurors are there?

8. Karen got a loan for $800 to buy a used car. If she paid the loan back in 4 months, how much did she pay each month?

OBJECTIVE: To solve 2 digit divisor problems

TAKING A BIGGER STEP IN DIVISION

There are 52 weeks in a year. How many years are there in 4,004 weeks? Remember these steps when dividing.

Divide — Multiply — Subtract — Bring down and repeat

$$\begin{array}{r} 77 \\ 52\overline{)\,4004} \\ -364 \\ \hline 364 \\ -\,364 \\ \hline 0 \end{array}$$

PART I

DIRECTIONS: Divide. Some will have remainders.

1) $34\overline{)714}$ 2) $26\overline{)832}$ 3) $11\overline{)561}$ 4) $15\overline{)690}$

5) $12\overline{)996}$ 6) $42\overline{)882}$ 7) $20\overline{)540}$ 8) $52\overline{)728}$

9) $63\overline{)889}$ 10) $44\overline{)528}$ 11) $31\overline{)982}$ 12) $16\overline{)489}$

PART II

DIRECTIONS: Divide.

1) 450 ÷ 25 =	2) 490 ÷ 35 =	3) 168 ÷ 12 =
4) 975 ÷ 25 =	5) 585 ÷ 39 =	6) 910 ÷ 65 =
7) 456 ÷ 38 =	8) 494 ÷ 19 =	9) 688 ÷ 43 =
10) 408 ÷ 24 =	11) 595 ÷ 35 =	12) 396 ÷ 22 =
13) 779 ÷ 41 =	14) 629 ÷ 37 =	15) 456 ÷ 24 =
16) 495 ÷ 11 =	17) 408 ÷ 34 =	18) 990 ÷ 10 =
19) 372 ÷ 31 =	20) 225 ÷ 15 =	21) 1,936 ÷ 44 =
22) 1,656 ÷ 36 =	23) 3,960 ÷ 88 =	24) 1,170 ÷ 18 =
25) 1,386 ÷ 14 =	26) 1,984 ÷ 32 =	27) 2,368 ÷ 74 =
28) 1,519 ÷ 49 =	29) 1,550 ÷ 62 =	30) 1,300 ÷ 25 =

GREATER OR LESS IN DIVISION

A) Is 210 ÷ 15 > or < 26? 210 ÷ 15 = 14 So 210 ÷ 15 is < 26.

B) Is 1,296 ÷ 36 > or < 33? 1,296 ÷ 36 = 36 So 1,296 ÷ 36 is > 33.

PART III

DIRECTIONS: Write the correct symbol in each sentence. The first one has been done for you.

1)	378 ÷ 18 <	25	2)	432 ÷ 36	10
3)	425 ÷ 25	11	4)	396 ÷ 33	14
5)	448 ÷ 32	13	6)	304 ÷ 19	17
7)	315 ÷ 21	19	8)	560 ÷ 16	35
9)	957 ÷ 33	27	10)	915 ÷ 61	13
11)	2,275 ÷ 65	39	12)	2,025 ÷ 45	47
13)	3,026 ÷ 34	87	14)	1,309 ÷ 17	79
15)	3,136 ÷ 98	34	16)	4,653 ÷ 47	87
17)	3,726 ÷ 69	64	18)	5,183 ÷ 73	73
19)	3,936 ÷ 41	93	20)	1,386 ÷ 14	98

OBJECTIVE: To solve one-step word problems with division

DIRECTIONS: Solve the following problems.

1. Split 225 into 5 equal parts. _____

2. What is 456 divided by 24? _____

3. How many times does 12 go into 48? _____

4. Katrina had 36 pieces of candy. She wanted to divide them evenly among her 4 children. How many pieces did each child get? _____

5. Three men went in together on a lottery ticket. They won $900. How much did each man get? _____

6. Renaldo paid $840 in rent for 5 months. How much did he pay each month? _____

7. A block of Cubs tickets cost $75. There are 25 tickets to a block. How much did each ticket cost? _____

8. Citywide Radio stores had a sale. At that time 700 SNOOP radios were divided among 10 stores. How many SNOOP radios did each store have? _____

9. Josie had 17 yards of material. She wanted to make 8 shirts. How much material would she have for each shirt? How much would she have left over? _____

10. The book had 294 pages. Frank wanted to read it in 7 days. How many pages would he have to read each day? _____

11. It costs $40 to make a person-to-person call to Hong Kong and talk for 10 minutes. How much does each minute cost?

answer _____

12. Delia earned $32 working 8 hours last Monday. How much does she make an hour?

answer _____

13. There are 52 weeks in a year. Gas company employees are paid every 2 weeks. How many paychecks do they get?

answer _____

14. The Reynolds paid $324 for 4 bicycles. All the bicycles cost the same. How much did each bike cost?

answer _____

15. Mr. Wing writes the same number of checks each month. In a 6 month period, Mr. Wing wrote 78 checks. How many checks does he write each month?

answer _____

16. At a factory, 504 blouses are sewn by 9 workers each day. How many blouses is each worker expected to sew?

answer _____

17. A $1,500 prize was split among 4 people. What amount did each person get?

answer _____

18. Delores Rice had 153 coupons in her coupon box. She split them evenly among her three daughters. How many coupons did each get?

answer _____

19. A video dealer paid $3,276 for 7 color model #5716 TV sets. How much did he pay for each set?

answer _____

20. A washer and dryer cost the same amount. Together they totaled $976. What would each machine cost separately?

answer _____

OBJECTIVE: To recognize and use vocabulary related to computations

Words and Doing Math

Some words in the language of math are special. These words are used to tell us what to do with math problems. As you learned in previous courses, some words are names for parts of problems.

The Four Basic Operations

Addition

57 ← addend
+ 31 ← addend
88 ← sum (or total)

addend sum (total)
230 + 14 = 244
addend

Subtraction

75 ← minuend
- 15 ← subtrahend
60 ← difference

minuend difference
68 - 6 = 62
subtrahend

Multiplication

71 ← factor
x 4 ← factor
284 ← product

factor product
12 x 6 = 72
factor

Division

divisor → 5) 100 ← quotient
500 ← dividend

dividend quotient
45 ÷ 15 = 3
divisor

Other words, along with symbols, suggest what operation to do in a problem. For instance, "the sum of 5 and 6 is" means to add 5 and 6, (5+6=11). Some words which suggest the four basic operations are as follows.

Addition +	Subtraction -
total	difference
sum	take away
plus	minus
and	less
altogether	left

Multiplication x	Division ÷
times	split
twice	quotient
triple	into
product	

The words that could mean equal in a problem are as follows.

Equal =
is
are
is the same as
equals
equal to

PART I

DIRECTIONS: Circle the word which does not belong.

EXAMPLE: dollar nickel cent (hour)
"Hour" is the word that does not belong.
It does not relate to money.

1.	add	total	sum	difference
2.	factor	product	times	take away
3.	hundreds	tens	fifteen	ones
4.	divisor	carrying	renaming	borrowing
5.	less than	alphabet	greater than	equal to
6.	subtract	take away	minus	product
7.	sofa	quotient	divisor	remainder
8.	minuend	product	sum	difference
9.	flower	take away	divide	multiply

PART II

DIRECTIONS: Circle the symbol which stands for the word to the left.

EXAMPLE: division + (÷) *

1.	plus	÷	-	+	x	6.	less	-	÷	=	>
2.	times	x	-	+	>	7.	is	<	-	+	=
3.	are	x	=	÷	+	8.	take away	-	+	÷	=
4.	equals	+	-	=	>	9.	and	>	<	÷	+
5.	greater than	>	-	=	+	10.	into	x	>	<	÷

PART III

DIRECTIONS: Place a +, -, ÷, or x sign next to each word or phrase that suggests that operation.

EXAMPLES:

sum __+__ twice __x__

1.	divisor	_____	11.	product	_____
2.	times	_____	12.	into	_____
3.	double	_____	13.	less	_____
4.	plus	_____	14.	quotient	_____
5.	multiplication	_____	15.	factor	_____
6.	more	_____	16.	difference	_____
7.	triple	_____	17.	half	_____
8.	split	_____	18.	total	_____
9.	remainder	_____	19.	dividend	_____
10.	addend	_____	20.	minus	_____

PART IV

DIRECTIONS: Write the following problems in numbers and symbols.

EXAMPLE:
Fifteen and ten is twenty-five. 15+10=25

1. Forty-five plus two is forty-seven. _____

2. The difference of seven and three is four. _____

3. Twice ten equals twenty. _____

4. The sum of three hundred plus fifty is three hundred fifty. _____

5. One thousand divided by ten equals one hundred. _____

6. Four hundred eighty minus eighty is four hundred. _____

7. Two goes into sixteen eight times. _____

8. Seven is five less than twelve. _____

9. The total of thirty-one and ten is forty-one. _____

10. Fifty-seven take away three is fifty-four. _____

OBJECTIVE: To round numbers

ROUNDING

1. Underline the digit in the place you are rounding to.
2. If the digit to the right of the underlined digit is 5 or more, add 1 to the underlined digit.
3. If the digit to the right of the underlined digit is 4 or less, leave the underlined digit as it is.
4. Replace all digits to the right of the underlined digit with 0's.

Contributed by
Martha Murray,
Training Specialist

DIRECTIONS: Study the rules above and the examples below.

1) Round 93 to the nearest ten.

93 is rounded to 90. Why? Because the number to the right of 9 is 3, and 3 is less than 5.

2) Round 184 to the nearest hundred.

184 is rounded to 200. Why? Because the number to the right of 1 is 8, and 8 is greater than 5.

3) Round 5,497 to the nearest thousand.

5,497 is rounded to 5,000. Why? Because the number to the right of 5 is 4, and 4 is less than 5.

Here are a few more for you to study. These numbers are rounded to the nearest ten.

a) 764 = 760 b) 83 = 80 c) 99 = 100

These numbers are rounded to the nearest ten-thousand.

a) 9,765 = 10,000 b) 56,765 = 60,000 c) 74,365 = 70,000

PART I

DIRECTIONS: Round to the nearest 10.

1) 91 = _____ 2) 11 = _____ 3) 15 = _____ 4) 86 = _____

5) 72 = _____ 6) 97 = _____ 7) 45 = _____ 8) 24 = _____

9) 43 = _____ 10) 53 = _____ 11) 33 = _____ 12) 88 = _____

PART II

DIRECTIONS: Round to the nearest 100.

1) 723 = _____ 2) 445 = _____ 3) 919 _____ 4) 582 _____

5) 362 = _____ 6) 612 = _____ 7) 203 = _____ 8) 659 = _____

9) 486 = _____ 10) 537 = _____ 11) 451 = _____ 12) 987 = _____

PART III

DIRECTIONS: Round to the nearest 1,000.

1) 5,036 = _____ 2) 7,843 = _____ 3) 4,706 = _____

4) 3,946 = _____ 5) 2,604 = _____ 6) 996 = _____

7) 6,673 = _____ 8) 8,001 = _____ 9) 1,062 = _____

10) 2,435 = _____ 11) 4,532 = _____ 12) 5,104 = _____

PART IV

DIRECTIONS: Round to the nearest 10,000.

1) 12,235 = _____ 2) 48,056 = _____ 3) 55,555 = _____

4) 92,015 = _____ 5) 23,567 = _____ 6) 11,476 = _____

7) 25,726 = _____ 8) 68,543 = _____ 9) 77,321 = _____

10) 36,571 = _____ 11) 31,293 = _____ 12) 80,342 = _____

PART V

DIRECTIONS: Round to the nearest 100,000.

1) 537,000 = _____ 2) 403,026 = _____ 3) 170,086 = _____

4) 360,360 = _____ 5) 745,679 = _____ 6) 986,063 = _____

7) 223,786 = _____ 8) 315,642 = _____ 9) 666,679 = _____

10) 478,536 = _____ 11) 853,567 = _____ 12) 948,142 = _____

PART VI

DIRECTIONS: Round to the nearest 1,000,000.

1) 7,073,584 = _____ 2) 6,567,432 = _____

3) 9,647,503 = _____ 4) 1,006,864 = _____

5) 2,567,864 = _____ 6) 9,986,456 = _____

7) 4,760,312 = _____ 8) 2,364,895 = _____

9) 1,760,936 = _____ 10) 5,546,021 = _____

11) 5,132,079 = _____ 12) 4,463,132 = _____

PART VII

DIRECTIONS: Round each number to the nearest ten, hundred or thousand. The first one has been done for you.

	nearest 10	nearest 100	nearest 1,000
1) 4,380	4,380	4,400	4,000
2) 6,734			
3) 1,369			
4) 3,056			
5) 4,913			
6) 5,387			
7) 9,950			
8) 2,227			
9) 1,539			
10) 7,357			
11) 3,636			
12) 5,294			
13) 2,173			
14) 1,815			
15) 6,637			

PART VIII

DIRECTIONS: Round each number to the nearest ten-thousand, hundred-thousand or million. The first one has been done for you.

		nearest 10,000	nearest 100,000	nearest 1,000,000
1)	3,473,562	3,470,000	3,500,000	3,000,000
2)	5,610,383			
3)	7,923,005			
4)	1,521,648			
5)	9,707,023			
6)	2,987,999			
7)	8,178,522			
8)	4,486,101			
9)	1,512,623			
10)	6,667,013			
11)	2,073,129			
12)	7,624,563			
13)	9,029,984			
14)	8,897,171			
15)	4,973,022			

OBJECTIVE: To do computations involving time and measurement

How Many Minutes?

PART I

When we work, we usually get paid by the hour. But what if we don't work a whole hour?

There are 60 minutes in an hour.
This clock is divided into 12 sections.

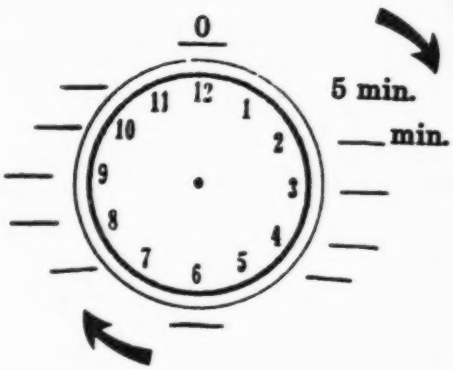
Think of 12 o'clock as zero.
Count out loud by 5's,
touching each number as you go around the clock.

Then fill in the blanks beside the clock.

When you got to 12 again, you had counted _____ minutes.

So we can think of the 12 position as

0 minutes
or
60 minutes.



DIRECTIONS: Use the clock you made to fill in the blanks.

1) What clock number is at 20 minutes? _____

2) What number is at 35 minutes? _____

3) What number is at 45 minutes? _____

4) What number is halfway around the clock? _____

5) What number is at 50 minutes (or at 10 minutes before the next hour)?_____

6) What number is at 55 minutes (or at 5 minutes before the next hour)?_____

Parts of an Hour

PART II

A.

The time is:

_____

This can be either

NOON (12 p.m.)
or
MIDNIGHT (12 a.m.)

B. This clock has been divided into two parts by its hands. The minute hand has gone 30 minutes or half way around.

The time is _____.

We also say
"half past twelve."

C.

This clock has been divided into 4 parts.
So each section is 1/4 of the whole, or one quarter.

How many minutes in each 1/4 ?_____

So we say 15 minutes = 1/4 hour

or 15 minutes = one quarter hour.

1) The number _____ is at 1/4 or a quarter past
or a quarter after.

2) The number _____ is at 2/4 or half past.

3) The number 9 is at _____ or three quarters past.

4) The number _____ is at 4/4 or one whole hour.

NOTE: Look at the number 9. Three quarters past is close to the next hour. So we usually say

a quarter to,
a quarter of, or
a quarter til.

So 3:45 can be: three forty-five
or: a quarter til four

OBJECTIVE: To write time in numbers and in words

What Time Is It?

DIRECTIONS: Write the time both in numbers and in words, as many ways as you can. The first one has been done.

1)

3:30

half past 3

three thirty

2)

3)

4)

5)

6)

7)

8)

9)

OBJECTIVE: To do computations involving time and measurement

ABOUT TIME

Here is how our time is named.

12 a.m. = **MIDNIGHT**
1 a.m.
2 a.m.
3 a.m.
4 a.m.
5 a.m.
6 a.m.
7 a.m.
8 a.m.
9 a.m.
10 a.m.
11 a.m.
12 p.m. **NOON**
1 p.m.
2 p.m.
3 p.m.
4 p.m.
5 p.m.
6 p.m.
7 p.m.
8 p.m.
9 p.m.
10 p.m.
11 p.m.
12 a.m. **MIDNIGHT**

morning

afternoon

a.m.
"ante meridian"
means "before noon"

p.m.
"post meridian"
means "after noon"

DIRECTIONS: Use this to help you figure out these questions about time.

1. Harold left the house at 6 p.m. and returned home at 8 p.m. How long was he gone?
   Solution: either count the hours--6 to 7 = 1 hour
   7 to 8 = 1 hour
   total = 2 hours

   Or subtract: 8 p.m.
   -6 p.m.
   2 hours

2. The morning "Rush Hour" goes from 6 a.m. to 9 a.m. Instead of an hour the "Rush Hour" actually lasts _____.

3. June's shift is evenings: 3 p.m. to 11 p.m. How long does she work in one day? _____

4. How many hours does June work in a 5-day week? _____

5. How many hours is it from one midnight to the next midnight?
   _____

6. How long is it from 7 a.m. to 7 p.m.? _____

OBJECTIVE: To find elapsed time

HOW MUCH TIME HAS PASSED?

If you started work at 7 a.m. and worked until 11:30 a.m., how many hours did you work?

We can find the answer two ways:

One way

We can count:

7 to 8 = 1 hour
8 to 9 = 1 hour
9 to 10 = 1 hour
10 to 11 = 1 hour
11 to 11:30 = 1/2 hour
4 1/2 hours

Other way

Or we can subtract:

11 hours, 30 minutes
- 7 hours
4 hours, 30 minutes

or

4 1/2 hours

Now, suppose you are paid $8.50 per hour, how much will you get paid? (You will earn $4.25 for half an hour.)
We can find the answer two ways:

We can add:

$ 8.50
8.50
8.50
8.50
+4.25
$38.25

← for 1/2 hour →

Or we can multiply:

$ 8.50
x 4
34.00
+4.25
$38.25

Example 1:
Work from 9:15 to 12:30. How long?

One way
We can count:

9:15 to 10:15 = 1 hour
10:15 to 11:15 = 1 hour
11:15 to 12:15 = 1 hour
12:15 to 12:30 = 1/4 hour
3 1/4 hours

Other way
Or we can subtract:

12 hours, 30 minutes
- 9 hours, 15 minutes
3 hours, 15 minutes

or

3 1/4 hours

A. DIRECTIONS: Fill in the blanks. Use either method. Be sure to write hours or hours and minutes.

1) From 2 p.m. to 10:45 p.m. = *8 hours, 45 minutes or 8 3/4 hrs.*

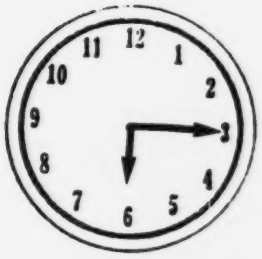
2) From 6:30 a.m. to 9:30 a.m.= _____

3) From 1:15 p.m. to 5:45 p.m. = _____

4) From 3 a.m. to 8:15 a.m. = _____

EXAMPLE 2:

Work from 6:15 to 9. How long?



We can still find it by counting:

6:15 to 7:15 = 1 hour
7:15 to 8:15 = 1 hour
8:15 to 9:00 = 3/4 hour or 45 minutes
2 3/4 hours or 2 hours, 45 minutes

Here is how we find it by subtracting:

9 hours, 0 minutes
6 hours, 15 minutes
can't subtract 15 from zero

So change 1 hour to 60 minutes.

9 hours, 0 minutes	= 8 hours, 60 minutes
- 6 hours, 15 minutes	= - 6 hours, 15 minutes
	2 hours, 45 minutes

B. DIRECTIONS: Fill in the blanks. Use either method. Be sure to write hours or hours and minutes.

1) From 2:45 p.m. to 10:00 p.m. = *7¼ hours or 7 hours, 15 min.*

2) From 6:30 a.m. to 10:00 a.m. = _____

3) From 1:15 p.m. to 6:00 p.m. = _____

4) From 3:45 a.m. to 7:30 a.m. = _____

5) From 8:30 p.m. to 11:15 p.m. = _____

OBJECTIVE: To find elapsed time when it passes 12 o'clock

ELAPSED TIME

If you started work at 9 a.m. and worked until 2:30 p.m., how many hours did you work?

When the time you worked passes 12 o'clock, we can't find the answer by subtracting directly.

We can still find it by counting:

9:00 to 10:00 = 1 hour
10:00 to 11:00 = 1 hour
11:00 to 12:00 = 1 hour
12:00 to 1:00 = 1 hour
1:00 to 2:00 = 1 hour
2:00 to 2:30 = 1/2 hour
5 1/2 hours or 5 hours, 30 minutes

We can find it by subtracting if we do it in two parts.

First, we go up to 12 o'clock.

12 hours, 0 minutes
- 9 hours
3 hours

Then from 12 (we call it zero) to 2:30

2 hours, 30 minutes
- 0 hours
2 hours, 30 minutes

Total: 5 hours, 30 minutes

A. **DIRECTIONS:** Fill in the blanks. Use either method. Be sure to write hours, or hours and minutes.

1) From 8:45 p.m. to 3:00 a.m. = _____

2) From 6:30 a.m. to 1:00 p.m. = _____

3) From 8:15 a.m. to 3:15 p.m. = _____

4) From 7:15 a.m. to 8:30 p.m. = _____

5) From 8:30 p.m. to 2:00 a.m. = _____

STILL WORKING

Charlie works at a burger place. He has to punch a time clock. He gets paid for each FULL quarter-hour he works. A quarter-hour is 15 minutes.

Starting time

15 minutes
1/4 hour
one quarter

30 minutes
2/4 hour
one half

45 minutes
3/4 hour
three quarters

60 minutes
4/4 hour
one hour

Charlie punched in at 8:15 a.m. and punched out at 2:37 p.m. How many hours will he be paid for?

Solution: 8:15 to 12:15 = 4 hours

12:15 to 2:15 = 2 hours

2:15 to 2:30 = 1/4 hour

Total = 6 1/4 hours

NOTE: Charlie will not get paid for the 7 minutes from 2:30 to 2:37. He will only get paid for each FULL 15 minutes.

B. **DIRECTIONS:** How many hours? Use only FULL quarter hours.

1) 4:30 to 11:30

2) 2:30 to 8:15

3) 1:45 to 6:05

4) 10:20 to 6:46

5) 12:05 to 6:00

6) 9:15 to 3:07

GETTING PAID

Chip makes $8 per hour. How much would he make in half an hour?

_____

You found it by dividing: $8 ÷ 2 = ____

To find out how much he would make in one quarter of an hour, you would divide by 4.

$8 ÷ 4 = $2

Let's keep our results in a chart.

If wage is $8 per hour:

Time	Wage	
1/4 hour		
1/2 hour		
3/4 hour		←This is 3 times 1/4
4/4 hour		←One whole hour

EXAMPLE 1: 2 1/2 hours at $ 6.50 per hour

1/2 hour: $6.50 ÷ 2 → $3.25 → $ 3.25

2 hours: $6.50 x 2 → $13.00 → + 13.00

Total $16.25

EXAMPLE 2: 5 3/4 hours at $9.60 per hour

for 1/4 hour: $9.60 ÷ 4 → $2.40

for 3/4 hour, 3 times that: $2.40 x 3 → $7.20 → $7.20

5 hours: $9.60 x 5 → $48.00 → +48.00

Total $55.20

DIRECTIONS: Find out how much was earned. Make a chart if needed.

1) 8 1/2 hours at $10.00 per hour

2) 7 1/4 hours at $8.40 per hour

3) 9 3/4 hours at $6.50 per hour

4) 3 1/2 hours at $4.75 per hour

5) 6 1/4 hours at $5.90 per hour

6) 8 3/4 hours at $7.35 per hour

7) 5 1/2 hours at $3.65 per hour

OBJECTIVE: To find quotients using zero as a place value

EXAMPLE: $5\overline{)\ 2,540}$?

Step 1: Divide: 5 into 25 = 5

$$5\overline{)\ 2,540}\quad 5$$

Step 2: Multiply: 5 x 5 = 25

$$\begin{array}{r} 5 \\ 5\overline{)\ 2,540} \\ -2\ 5 \end{array}$$

Step 3: Subtract: 25 - 25 = 0

$$\begin{array}{r} 5 \\ 5\overline{)\ 2,540} \\ -2\ 5 \\ \hline 0 \end{array}$$

Step 4: Bring down 4

$$\begin{array}{r} 5 \\ 5\overline{)\ 2,540} \\ -2\ 5 \\ \hline 04 \end{array}$$

Step 5: Divide: 5 into 4 = 0

$$\begin{array}{r} 50 \\ 5\overline{)\ 2,540} \\ -2\ 5 \\ \hline 04 \end{array}$$

Step 6: Multiply: 5 x 0 = 0

$$\begin{array}{r} 50 \\ 5\overline{)\ 2,540} \\ -2\ 5 \\ \hline 04 \\ \underline{0} \end{array}$$

Step 7: Subtract: 4 - 0 = 4

$$\begin{array}{r} 50 \\ 5\overline{)\ 2,540} \\ -2\ 5 \\ \hline 04 \\ -\underline{0} \\ 4 \end{array}$$

Step 8: Bring down 0

```
     50
5) 2,540
  -2 5
   ---
    04
   -0
   --
    40
```

Step 9: Divide: 5 into 40 = 8

```
     508
5) 2,540
  -2 5
   ---
    04
   -0
   --
    40
```

Step 10: Multiply: 5 x 8 = 40

```
     508
5) 2,540
  -2 5
   ---
    04
   -0
   --
    40
   -40
   ---
```

Step 11: Subtract: 40 - 40 = 0

```
     508
5) 2,540
  -2 5
   ---
    04
   -0
   --
    40
   -40
   ---
     0
```

PART I

DIRECTIONS: Solve the following.

1) $4\overline{)832}$

2) $3\overline{)927}$

3) $9\overline{)918}$

4) $7\overline{)763}$

5) $6\overline{)3,654}$

6) $7\overline{)2,856}$

7) $2\overline{)1,010}$

8) $5\overline{)505}$

9) $4\overline{)280}$

10) $6\overline{)480}$

11) $3\overline{)120}$

12) $8\overline{)640}$

13) $7\overline{)4,970}$

14) $9\overline{)8,109}$

15) $2\overline{)2,048}$

16) $4\overline{)412}$

17) $3\overline{)921}$

18) $2\overline{)810}$

19) $3\overline{)615}$

20) $5\overline{)540}$

21) $2\overline{)618}$

22) $6\overline{)5,442}$

23) $8\overline{)2,464}$

24) $9\overline{)6,363}$

25) $7\overline{)1,435}$

26) $4\overline{)1,228}$

27) $3\overline{)2,715}$

28) $43\overline{)8,944}$

29) $24\overline{)9,768}$

30) $17\overline{)10,234}$

OBJECTIVE: To check division by multiplication

CHECKING DIVISION BY MULTIPLICATION

We know that multiplication and division are related. We can use this to check our division.

EXAMPLE:

QUOTIENT

15 R 11 ← Remainder

Divisor → 26)401 ← Dividend

If the division is correct, then

(Divisor x Quotient) + Remainder = Dividend

(26 x 15) + 11 = 401

Check by multiplying:

```
   3
  26     Divisor
x 15     Quotient
 130
  26
 390
+ 11     Remainder
 401     OK
```

A. DIRECTIONS: Check each division problem. Write OK if correct, NO if not correct.

1) $28\overline{)245}$ = 8 R 3

Check:

```
 28
x  8
+  3
```

2) $56\overline{)1,288}$ = 23

Check:

```
 56
x 23
```

3) $9\overline{)735}$ = 81 R 6

Check

```
 81
x  9
+  6
```

B. DIRECTIONS: Divide and check.

Example:

$$\begin{array}{r} 602 \\ 6\overline{)3612} \\ 36 \\ \hline 01 \\ 0 \\ \hline 12 \\ 12 \end{array}$$

$$\begin{array}{r} 602 \\ \times\ 6 \\ \hline 3612 \end{array}$$

1) $3\overline{)1,218}$

2) $7\overline{)2,114}$

3) $3\overline{)2,472}$

4) $4\overline{)1,224}$

5) $5\overline{)4,535}$

6) $37\overline{)7,548}$

7) $43\overline{)8,901}$

8) $51\overline{)5,406}$

9) $18\overline{)16,272}$

10) $49\overline{)24,892}$

11) $46\overline{)44,446}$

12) $62\overline{)25,296}$

OBJECTIVE: To solve 3 digit divisor problems with 3 digit quotients

PART I

DIRECTIONS: Solve the following problems. Some will have remainders.

EXAMPLES:

$$\begin{array}{r} 115 \\ 429\overline{)49,335} \\ -429 \\ \hline 643 \\ -429 \\ \hline 2145 \\ -2145 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 102 \text{ r. } 6 \\ 350\overline{)35,706} \\ -350 \\ \hline 706 \\ -700 \\ \hline 6 \end{array}$$

1) $154\overline{)65,604}$

2) $320\overline{)67,520}$

3) $111\overline{)24,624}$

4) $122\overline{)14,274}$

5) $912\overline{)93,966}$

6) $198\overline{)30,492}$

7) $101\overline{)30,805}$

8) $314\overline{)98,600}$

9) $100\overline{)10,410}$

10) $500\overline{)58,517}$

11) $107\overline{)21,947}$

12) $197\overline{)60,676}$

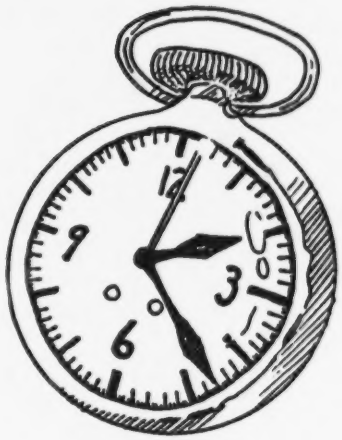
PART II

DIRECTIONS: Divide. The first one has been done for you.

1) 42,918 ÷ 138 = 311	2) 51,118 ÷ 122 =
3) 78,750 ÷ 225 =	4) 44,541 ÷ 303 =
5) 46,000 ÷ 400 =	6) 51,005 ÷ 505 =
7) 67,710 ÷ 610 =	8) 93,725 ÷ 815 =
9) 90,900 ÷ 900 =	10) 72,409 ÷ 703 =
11) 39,601 ÷ 199 =	12) 89,102 ÷ 299 =
13) 25,488 ÷ 177 =	14) 73,830 ÷ 345 =
15) 62,361 ÷ 507 =	16) 76,846 ÷ 499 =

17) 52,920 ÷ 139 =	18) 35,450 ÷ 180 =
19) 72,351 ÷ 510 =	20) 55,120 ÷ 405 =
21) 47,655 ÷ 200 =	22) 56,125 ÷ 125 =
23) 45,000 ÷ 305 =	24) 79,840 ÷ 500 =
25) 44,600 ÷ 305 =	26) 80,000 ÷ 522 =
27) 52,888 ÷ 180 =	28) 74,110 ÷ 104 =
29) 52,739 ÷ 518 =	30) 90,427 ÷ 307 =
31) 64,867 ÷ 594 =	32) 20,639 ÷ 158 =

OBJECTIVE: To compare common units of time



MEASURING UP IN TIME
60 seconds (sec.) = 1 minute (min.)
60 minutes = 1 hour (hr.)
24 hours = 1 day

PART I

DIRECTIONS: Fill in the blank.

EXAMPLES: 120 seconds = ? minutes
120 seconds = 2 minutes

$$60\overline{)120} \text{ secs.} = 2 \text{ mins.}$$
$$-120$$
$$0$$

3 days = ? hours
3 days = 72 hours

$$24 \text{ hrs.} \times 3 \text{ days} = 72 \text{ hrs.}$$

1) 120 minutes = _____ hours

2) 48 hours = _____ days

3) 24 hours = _____ days

4) 3 days = _____ hours

5) 360 seconds = _____ minutes

6) 8 hours = _____ minutes

7) 72 hours = _____ days

8) 600 seconds = _____ minutes

9) 540 minutes = _____ hours

10) 1,920 minutes = _____ hours

11) 13 minutes = _____ seconds

12) 24 hours = _____ minutes

7 days	= 1 week (wk.)
30 days	= 1 month (mo.)
4 weeks	= 1 month
365 days	= 1 year (yr.)
12 months	= 1 year
52 weeks	= 1 year

PART II

DIRECTIONS: Fill in the blank.

EXAMPLES:

14 days = ? weeks
14 days = 2 weeks

$$7\overline{)14} = 2 \text{ wks.}$$
$$-14$$
$$0$$

2 weeks = ? days
2 weeks = 14 days

$$7 \text{ days} \times 2 \text{ wks.} = 14 \text{ days}$$

1) 8 weeks = _____ months

2) 7 months = _____ days

3) 21 days = _____ weeks

4) 4 years = _____ days

5) 730 days = _____ years

6) 60 days = _____ months

7) 6 months = _____ days

8) 12 months = _____ weeks

9) 360 days = _____ months

10) 18 weeks = _____ days

11) 12 years = _____ months

12) 8 years = _____ months

13) 156 weeks = _____ years

14) 24 months = _____ years

SUMMARY CHART

UNITS OF TIME

60 seconds	(sec.)	=	1 minute	(min.)
60 minutes	(min.)	=	1 hour	(hr.)
24 hours	(hr.)	=	1 day	
7 days	(days)	=	1 week	(wk.)
30 days	(days)	=	1 month	(mo.)
4 weeks	(wk.)	=	1 month	(mo.)
12 months	(mo.)	=	1 year	(yr.)
52 weeks	(wk.)	=	1 year	(yr.)

PART III

DIRECTIONS: Fill in the blanks. Use the above chart if you need help.

EXAMPLES: 7 days = 1 week
120 minutes = 2 hours

1) 240 minutes = _____ hours

2) 104 weeks = _____ years

3) 8 weeks = _____ months

4) 63 days = _____ weeks

5) 180 seconds = _____ minutes

6) 480 hours = _____ days

7) 6,000 minutes = _____ hours

8) 108 months = _____ years

9) 48 weeks = _____ months

10) 192 hours = _____ days

11) 96 months = _____ weeks

12) 416 weeks = _____ years

13) 540 minutes = _____ hours

14) 144 hours = _____ days

15) 91 days = _____ weeks

16) 60 months = _____ years

17) 300 minutes = _____ hours

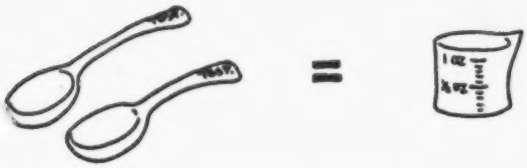
18) 36 weeks = _____ months

19) 104 weeks = _____ months

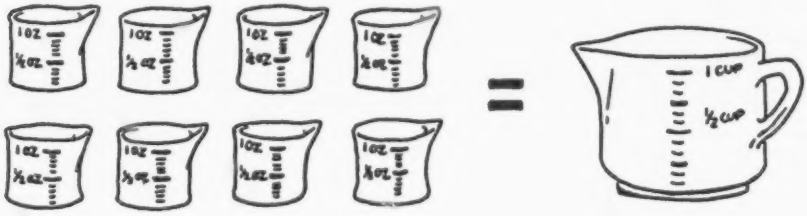
20) 210 days = _____ weeks

OBJECTIVE: To recognize common units of measurement

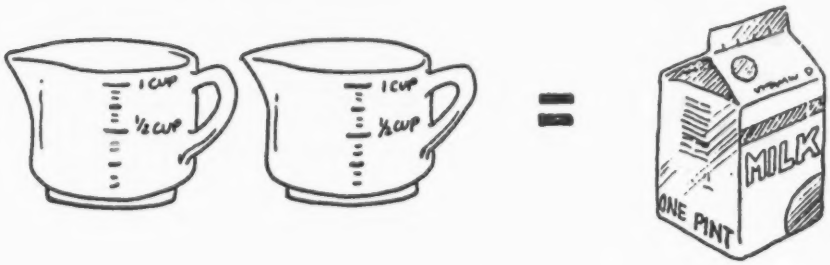
LIQUID MEASUREMENTS



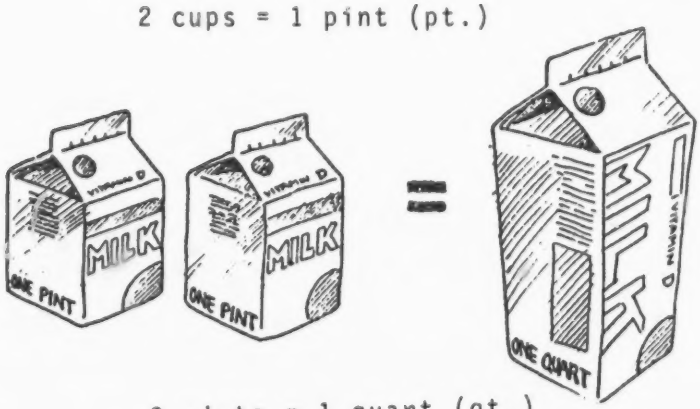
2 tablespoons (tb. sp.) = 1 fluid ounce (fl. oz.)



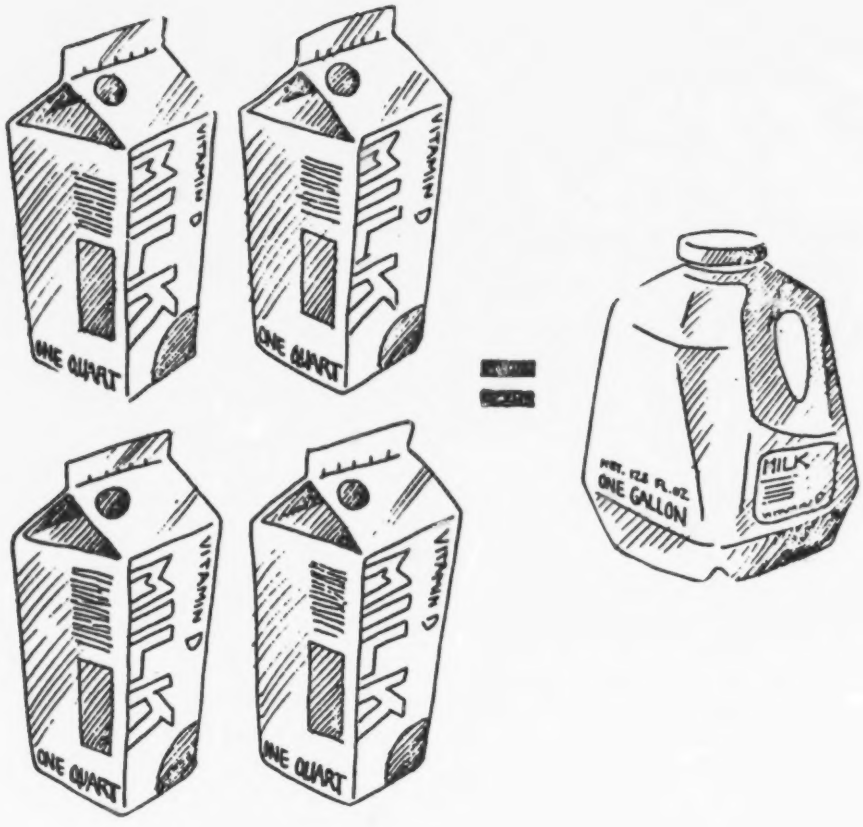
8 fluid ounces = 1 cup (c.)



2 cups = 1 pint (pt.)



2 pints = 1 quart (qt.)



4 quarts = 1 gallon (qal.)

2 tablespoons(tbsp.)	= 1 fluid ounce	(fl.oz.)
8 fluid ounces	= 1 cup	(c.)
2 cups	= 1 pint	(pt.)
2 pints	= 1 quart	(qt.)
4 quarts	= 1 gallon	(gal.)

PART I

DIRECTIONS: Fill in the blank.

EXAMPLES:

10 cups = ? pints

10 cups = 5 pints

$$2\overline{)10}\quad 5\text{pts.}$$
$$-10$$
$$0$$

8 gallons = ? quarts

8 gallons = 32 quarts

$$8 \times 4 = 32 \text{ qts.}$$

1) 4 tbsp. = _____ fl. oz.

2) 24 pints = _____ gallons

3) 2 quarts = _____ pints

4) 8 pints = _____ cups

5) 4 cups = _____ fl. oz.

6) 5 pints = _____ cups

7) 36 gallons = _____ quarts

8) 8 cups = _____ pints

9) 16 quarts = _____ gallons

10) 32 fl. oz. = _____ cups

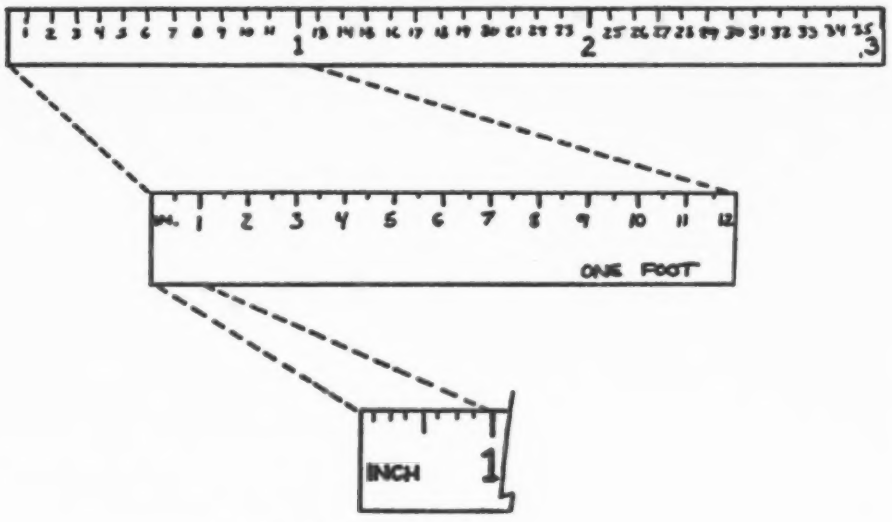
11) 3 quarts = _____ pints

12) 40 gallons = _____ quarts

13) 10 cups = _____ fl. oz.

14) 20 cups = _____ pints

LENGTH MEASUREMENTS



36 inches = 3 feet
36 inches = 1 yard (yd.) or
3 feet = 1 yard
5,280 feet = 1 mile (mi.)

PART II

DIRECTIONS: Fill in the blank.

EXAMPLES: 72 inches = ? feet

72 inches = 6 feet

$$12\overline{)72} \text{ in.} = 6 \text{ ft.}$$

$$\begin{array}{r} 6 \\ -72 \\ \hline 0 \end{array}$$

1) 24 inches = _____ feet

2) 36 inches = _____ feet

3) 360 inches = _____ yard(s)

4) 180 inches = _____ yard(s)

5) 75 feet = _____ yard(s)

6) 30 feet = _____ yard(s)

7) 12 inches = _____ feet

8) 96 inches = _____ feet

SUMMARY CHART

LIQUID MEASUREMENTS

2	tablespoons (tbsp.)	=	1	fluid ounce (fl. oz.)
8	fluid ounces (fl. oz.)	=	1	cup (c.)
2	cups (c.)	=	1	pint (pt.)
2	pints (pt.)	=	1	quart (qt.)
4	quarts (qt.)	=	1	gallon (gal.)

SOLID MEASUREMENTS

16	ounces (oz.)	=	1	pound (lb.)
2,000	pounds (lb.)	=	1	ton (t.)

LENGTH MEASUREMENTS

12	inches (in.)	=	1	foot (ft.)
3	feet (ft.)	=	1	yard (yd.)
5,280	feet (ft.)	=	1	mile (mi.)

PART III

DIRECTIONS: Write YES if the sentence is true. Write NO if the sentence is false. Use the chart to help you with your answers.

EXAMPLES: 1 yard = 3 feet YES
3 feet = 12 inches NO

1) 4 cups = 8 fluid ounces _____
2) 3 feet = 1 mile _____
3) 1 quart = 2 pints _____
4) 2 cups = 1 quart _____
5) 1 yard = 3 feet _____
6) 15,840 feet = 3 miles _____
7) 15 pints = 7 quarts _____
8) 80 ounces = 5 pounds _____
9) 2,000 pounds = 1 ton _____
10) 1 cup = 8 fluid ounces _____
11) 1 gallon = 4 quarts _____
12) 5,280 feet = 1 mile _____
13) 16 ounces = 1 ton _____
14) 144 inches = 10 feet _____
15) 10 feet = 3 yards _____
16) 10,000 pounds = 5 tons _____

PART IV

DIRECTIONS: Use the chart to answer the following questions.

EXAMPLES: A) 72 in. = 6 ft. B) 4 c. = 2 pt.

1) 1 lb. = _____ oz.

2) 4 pt. = _____ qt.

3) 16 c. = _____ pt.

4) 36 in. = _____ ft.

5) 3 t. = _____ lb.

6) 5,280 ft. = _____ yd.

7) 20 tbsp. = _____ fl. oz.

8) 8 pt. = _____ gal.

9) 9 ft. = _____ yd.

10) 2,000 lb. = _____ oz.

11) 240 in. = _____ ft.

12) 162 ft. = _____ yd.

13) 82 c. = _____ pt.

14) 576 qt. = _____ gal.

15) 18 ft. = _____ yd.

16) 42 tbsp. = _____ oz.

17) 36 in. = _____ yd.

18) 38 pt. = _____ qt.

19) 144 in. = _____ ft.

20) 124 lb. = _____ oz.

21) 156 c. = _____ pt.

22) 18 tbsp. = _____ oz.

23) 42,240 ft. = _____ mi.

24) 372 lb. = _____ oz.

25) 48 qt. = _____ gal.

26) 30,000 lb. = _____ t.

27) 192 in. = _____ ft.

28) 163,680 ft. = _____ mi.

29) 6,000 lb. = _____ t.

30) 108 pt. = _____ qt.

OBJECTIVE: To solve one-step word problems involving the four basic operations

PART I

DIRECTIONS: Draw a circle around the word or words in each problem that tell you which operation to use. Then solve the problem. The first one has been done for you.

1. A waitress served 8 people. The check came to $64. The group (split) the cost evenly. How much did each person pay? $ 8.00

2. Rayette and her 3 children took a trip on the bus. The children took turns counting telephone poles. James counted 157. Denise counted 189. Crystal was tired and only counted 97. What was the total number of telephone poles counted? _____

3. The auto junkyard had 1,756 cars. Some were crushed and sold for scrap metal. Then only 1,279 were left. How many fewer cars were there? _____

4. An old apartment house had been torn down. 5 people found 2,015 whole bricks. They divided the bricks among themselves. How many bricks did each person get? _____

5. Cars pass through the car wash 57 times each day. How many cars get washed in 5 days? _____

6. John Kennedy was president for 1,000 days. A year has 365 days. About how many years are there in 1,000 days? (Round answer to nearest year.) _____

7. Melvin weighed 225 pounds. He now weighs 188 pounds. How much less does he weigh? _____

8. The train made 3 stops. It was 67 miles to the first stop. It was 82 miles to the second stop. The train then went 74 miles to the third stop. What was the total number of miles? _____

9. Wilfred's car was in an accident. A new car door from the Ace Repair costs $555. A used door from Budget Repair costs $312. What is the difference in price? _____

10. On Friday night 55,463 people saw a concert. On Saturday night 61,523 saw the same concert. How many saw it altogether? _____

PART II

DIRECTIONS: Solve the following.

1. A church on the west side had a raffle. 2,625 tickets were given to 25 volunteers to sell. How many tickets were given to each one?

answer _____

2. Harvey works 468 newspaper crossword puzzles a year. How many does he do each week?

answer _____

3. Marcie made $819 in a two-week period. $149 in taxes were taken out of her check. What did she take home?

answer _____

4. It takes Louis 12 minutes to jog a mile. If he jogs for 72 minutes each day, how many miles does he run?

answer _____

5. Geraldine's new glasses cost $179. She also had a pair of sunglasses made for $129. How much did both pairs of glasses cost?

answer _____

6. The plumber gets paid $15 an hour. He worked in a new duplex a total of 72 hours. How much money did he make?

answer _____

7. It costs $55 for a Fashion Club membership. The club got 102 new members on their membership drive. What was the total amount of money they took in?

answer _____

8. Josef wanted a car that costs $12,899. He bought another car for $6,735. How much did he save?

answer _____

9. A train traveled an average of 58 miles per hour for 6 hours. How many miles did it travel?

answer _____

10. Sandra bought new furniture. She bought a sofa for $688, a love-seat for $358, and a coffee table for $159. What did her furniture cost?

answer _____

11. The United States won 54 gold medals, 49 silver, and 21 bronze in the Olympics one year. What was the total number of medals?

answer _____

12. Tuition at Zena's Beauty College is $240 a course. Pearl took 4 courses. How much did she pay?

answer _____

13. Ramon earned $660 interest on 3 $1,000 certificates of deposit. How much did each earn?

answer _____

14. The number one women's tennis player earned $1,800,956 last year. The number two player only won $386,427. What was the difference?

answer _____

15. Paul gets $4 taken out of his pay for every hour that he is late. One month he was late 12 hours. How much did he get taken out of his pay?

answer _____

16. The Mayor's Office had 275,040 "I Love Chicago" buttons made. These were divided evenly among 16 neighborhood groups to sell. How many buttons did each group get?

answer _____

17. The Little Village Community Center sold 15,673 buttons in one year. They were sold for $2 apiece. How much money did the center make?

answer _____

18. The elevator in the Love Building had to be fixed 4 times. The bills were $575, $1,010, $765, and $205. What was the total cost of the repairs?

answer _____

19. A radio station gave away lots at a fun fest. The first day 5,675 got hats. The second day 10,731 people got hats. How many more hats were needed for the second day?

answer _____

20. Marta types 60 words per minute. How many words should she be able to type in 5 minutes?

answer _____

OBJECTIVE: To average numbers

AVERAGING

Find the average of these six numbers: 19, 14, 11, 16, 27, 9.

To find an average, first add all the numbers. Then divide the sum of those numbers by how many numbers you added.

Step 1:

$$\begin{array}{r} 19 \\ 14 \\ 11 \\ 16 \\ 27 \\ +\ 9 \\ \hline 96 \end{array}$$

Step 2:

$$6\overline{)96} \quad \begin{array}{r} 16 \\ -6 \\ \hline 36 \\ -36 \\ \hline 0 \end{array}$$

PART I

DIRECTIONS: Find the average for each group of numbers.

1. 95, 85, 73, 81, 96
2. 115, 320, 164, 935, 221
3. 34, 89, 71, 66
4. 75, 21, 223, 842, 404, 25
5. 93, 65, 40, 34, 88
6. 70, 85, 90, 100, 60
7. 22, 48
8. 64, 72, 764, 295, 117, 242
9. 33, 40, 86
10. 71, 29, 32, 64
11. 63, 87, 30
12. 434, 72, 84, 30
13. 602, 250, 134, 728, 346
14. 48, 72, 66
15. 55, 70, 85, 60, 45
16. 37, 91
17. 82, 68, 34, 77, 94, 23
18. 70, 64, 81, 97, 53
19. 42, 78, 5[illegible]
20. 27, 38, 10, 75, 45

PART II

DIRECTIONS: Find the average test score for each person. To find the average, add each person's total score and divide by the number of tests he or she took. Kim scored 268 points on 4 tests. Her average is 67 points per test because 268 ÷ 4 = 67.

TEST SCORES

	Test 1	Test 2	Test 3	Test 4	Total	Average
Kim	88	70	46	64	268	67
John	60	65	53	66		
Maria	92	100	99	89		
Sally	Absent	83	91	78		
Jorge	100	98	85	89		
Brian	100	100	100	100		
Sandy	98	100	100	98		
Warren	71	83	62	Absent		
Robert	95	89	85	91		
Vera	70	75	78	69		
Susan	63	72	80	73		
William	88	84	81	95		
Jan	43	Absent	51	70		
Cheryl	23	15	45	33		

Absent = 0

PART III

DIRECTIONS: Find the average M.P.H. for each car. To find the average, add each car's total M.P.H. and divide by the number of laps it took. The first one has been done for you.

MILES PER HOUR

	Lap 1	Lap 2	Lap 3	Lap 4	Total	Average
Car 1	138	141	134	147	560	140
Car 2	149	101	99	123		
Car 3	150	100	125	125		
Car 4	91	98	109	138		
Car 5	110	38	117	83		
Car 6	127	138	130	57		
Car 7	157	146	119	62		
Car 8	78	102	133	99		
Car 9	113	150	99	138		
Car 10	110	159	133	74		
Car 11	136	111	99	102		
Car 12	135	112	104	97		
Car 13	149	101	130	120		
Car 14	141	126	126	55		

OBJECTIVE: To solve problems involving time with renaming

ADDING TIME

10 hours 42 minutes
+ 10 hours 24 minutes
?

Change all minutes over 59 into hours:
60 min. = 1 hr. so, 66 min. = 1 hr.
6 min. Add the 1 hr. to the 20 hrs.
in the answer and write the remaining
minutes.

10 hr. 42 min.
+ 10 hr. 24 min.
20 hr. 66 min.

21 hr. 6 min.

PART I

DIRECTIONS: Add the following. Remember to rename the sums.

1) 15 hr. 45 min.
+ 20 hr. 28 min.

__ hr. __ min.

2) 40 min. 53 sec.
+ 18 min. 35 sec.

__ min. __ sec.

3) 9 hr. 34 min.
+ 8 hr. 26 min.

__ hr. __ min.

4) 6 hr. 56 min.
+ 5 hr. 39 min.

__ hr. __ min.

5) 6 days 18 hr.
+ 3 days 10 hr.

__ days __ hr.

6) 7 wk. 10 days
+ 3 wk. 15 days

__ wk. __ days

7) 6 mo. 3 wk.
+ 3 mo. 8 wk.

__ mo. __wk.

8) 3 yr. 7 mo.
+ 5 yr. 8 mo.

__ yr. __ mo.

9) 2 mo. 3 wk.
+ 8 mo. 3 wk.

__ mo. __ wk.

10) 36 min. 47 sec.
+ 8 min. 59 sec.

___ min. __ sec.

11) 7 days 17 hr.
+ 8 days 16 hr.

__ days __ hr.

12) 6 yr. 16 mo.
+17 yr. 17 mo.

__ yr. __ mo.

13) 11 yr. 2 wk.
+23 yr. 7 wk.

__ yr. __ wk.

14) 1 mo. 4 wk.
+ 6 mo. 8 wk.

__ mo. __ wk.

15) 14 hr. 50 min.
+ 8 hr. 47 min.

__ hr. __ min.

SUBTRACTING TIME

13 days 82 hours
- 7 days 31 hours
6 days 51 hours

Change all hours over 23 into days: 24 hours = 1 day. So, 51 hours = 2 days 3 hours. Add the 2 days to the 6 days and write the remaining hours.

13 days 82 hr.
- 7 days 31 hr.
6 days 51 hr.

8 days 3 hr.

PART II

DIRECTIONS: Subtract the following. Rename the differences.

1) 36 min. 46 sec.
- 18 min. 28 sec.
____ min. __ sec.

2) 24 hr. 59 min.
- 7 hr. 15 min.
____ hr. __ min.

3) 60 min. 19 sec.
- 33 min. 18 sec.
____ min. __ sec.

4) 17 hr. 38 min.
- 12 hr. 6 min.
____ hr. __ min.

5) 71 days 18 hr.
- 47 days 20 hr.
____ days __ hr.

6) 84 yr. 66 days
- 9 yr. 45 days
____ yr. __ days

7) 14 wk. 7 days
- 13 wk. 9 days
____ wk. __ days

8) 15 yr. 2 mo.
- 4 yr. 10 mo.
____ yr. __ mo.

9) 99 yr. 52 wk.
- 17 yr. 37 wk.
____ yr. __ wk.

10) 97 yr. 11 mo.
- 15 yr. 2 mo.
____ yr. __ mo.

11) 33 hr. 17 min.
- 28 hr. 11 min.
____ hr. __ min.

12) 17 days 16 hr.
- 7 days 8 hr.
____ days __ hr.

13) 99 wk. 88 days
- 65 wk. 52 days
____ wk. __ days

14) 75 yr. 75 days
- 40 yr. 72 days
____ yr. __ days

15) 20 days 8 hr.
- 14 days 3 hr.
____ days __ hr.

MULTIPLYING TIME

5 hr. 36 min.
x 4
?

Multiply the minutes (36) by the 4. Then multiply the hour (5) by the 4. The answer is 20 hr. 144 min. Now change the 144 minutes to hours. There are 60 minutes in 1 hour. So 144 minutes equal 2 hours and 24 minutes. Add the 2 hours to the 20 hours and write the minutes.

5 hr. 36 min.
x 4
20 hr. 144 min.
22 hr. 24 min.

PART III

DIRECTIONS: Multiply the following. Remember to rename the products.

1) 4 hr. 59 min.
x 4
___hr.____ min.

2) 4 yr. 51 wk.
x 2
___yr.____ wk.

3) 5 wk. 19 days
x 5
___wk.____ days

4) 3 yr. 7 mo.
x 7
___yr.____ mo.

5) 8 days 6 hr.
x 6
___days____hr.

6) 6 yr. 7 days
x 6
___yr.____days

7) 4 mo. 3 wk.
x 6
___mo. __wk.

8) 3 hr. 60 min.
x 4
___hr.____ min.

9) 7 yr. 41 wk.
x 2
___yr.____ wk.

10) 3 wk. 21 days
x 5
___wk.___ days

11) 5 yr. 2 mo.
x 5
___yr.____ mo.

12) 7 days 3 hr.
x 7
___days___ hr.

OBJECTIVE: To solve problems involving units of measurement

MEASURING UP IN ADDITION

2 ft. 10 in.
+ 1 ft. 3 in.
?

Change all inches over 11 into feet: 12 in. =1 ft. so 13 in. = 1 ft. 1 in. Add the 1 foot to the feet in the answer and write the remaining inches in the inch column.

2 ft. 10 in.
+ 1 ft. 3 in.
3 ft. 13 in.

4 ft. 1 in.

PART I

DIRECTIONS: Add the following. Remember to rename the sums.

1) 5 yd. 7 ft.
+ 3 yd. 5 ft.

___ yd. __ ft.

2) 6 ft. 11 in.
+ 4 ft. 6 in.

__ ft. __ in.

3) 9 lb. 10 oz.
+ 2 lb. 7 oz.

__ lb. __ oz.

4) 1 gal. 3 qt.
+ 7 gal. 8 qt.

___ gal.__ qt.

5) 6 fl. oz. 3 tbsp.
+ 3 fl. oz. 2 tbsp.

__fl. oz. __tbsp.

6) 5 qt. 4 pt.
+ 4 qt. 8 pt.

__ qt. __ pt.

7) 3 lb. 12 oz.
+ 4 lb. 8 oz.

__ lb. __ oz.

8) 2 tons 2,000 lbs.
+15 tons 1,120 lbs.

__ tons _____ lbs.

9) 11 yd. 10 in.
+ 7 yd. 13 in.

__ yd. __ in.

10) 7 gal. 10 pt.
+ 6 gal. 6 pt.

__ gal. __ pt.

11) 4 lb. 22 oz.
+ 8 lb. 10 oz.

___ lb. __ oz.

12) 11 yd. 5 ft.
+ 5 yd. 8 ft.

___ yd. __ ft.

MEASURING UP IN SUBTRACTION

5 gal. 4 qt.
- 2 gal. 5 qt.
?

You cannot take 5 quarts from 4 quarts. You must borrow 1 gallon from the 5 gallons.

4 8
~~5~~ gal. ~~4~~ qt.
- 2 gal. 5 qt.

Your 4 quarts become 8 quarts because 4 qt. = 1 gal. Now subtract.

4 gal. 8 qt.
- 2 gal. 5 qt.
2 gal. 3 qt.

PART II

DIRECTIONS: Subtract the following measurements. Remember to rename the differences whenever necessary.

1) 6 lb. 5 oz.
- 5 lb. 16 oz.

___ lb. __ oz.

2) 8 yd. 2 ft.
- 3 yd. 3 ft.

___ yd. __ft.

3) 4 c. 7 fl. oz.
- 2 c. 9 fl. oz.

___ c.__ fl. oz.

4) 9 gal. 3 qt.
- 5 gal. 6 qt.

___ gal.__ qt.

5) 3 lb. 4 oz.
- 1 lb. 5 oz.

___ lb.__ oz.

6) 9 qt. 3 c.
- 7 qt. 5 c.

___ qt.__ c.

7) 15 ft. 10 in.
- 7 ft. 14 in.

___ ft.___ in.

8) 12 gal. 2 qt.
- 8 gal. 4 qt.

___ gal.__ qt.

9) 7 fl. oz. 3 tbsp.
- 5 fl. oz. 4 tbsp.

____fl. oz.___tbsp.

10) 23 ft. 4 in.
-19 ft. 9 in.

___ ft. __ in.

11) 18 qt. 1 pt.
- 15 qt. 3 pt.

___ qt. __ pt.

12) 13 lb. 7 oz.
- 9 lb. 9 oz.

___ lb. __ oz.

MEASURING UP IN MULTIPLICATION

EXAMPLES:

(A)

12 lb. 33 oz.
x 2

24 lb. 66 oz.
28 lb. 2 oz.

(B)

2 qt. 8 pt.
x 4

8 qt. 32. pt.
16 qt.

PART III

DIRECTIONS: Multiply the following. Remember to rename the product whenever necessary.

1) 9 t. 986 lb.
x 9

__t. ___ lb.

2) 5 oz. 7 tbsp.
x 5

__oz. __tbsp.

3) 35 ft. 4 in.
x 2

__ ft. __in.

4) 19 yd. 19 ft.
x 8

__ yd. ___ ft.

5) 32 lb. 35 oz.
x 4

__ lb. ___oz.

6) 6 c. 2 oz.
x 5

__c. ___oz.

7) 4 oz. 5 tbsp.
x 6

__oz. __tbsp.

8) 70 ft. 18 in.
x 5

__ ft. ___in.

9) 47 lb. 14 oz.
x 3

__ lb. __ oz.

10) 3 gal. 1 qt.
x 5

__gal. __qt.

11) 9 gal. 5 qt.
x 3

__gal. __qt.

12) 64 lb. 15 oz.
x 2

__lb. __oz.

OBJECTIVE: To solve one-step word problems involving the four basic operations

PART I

DIRECTIONS: These word problems are about time and measurement. Each problem has a set of questions. Solve each problem. Then answer the questions.

1. Jeanette did her homework for 1 hour and 15 minutes on Monday. She worked for 45 minutes on Tuesday. How much longer did she work on Monday? answer _____

   a. What are you asked to find? (Check (✓) one.)

      _____ the sum

      _____ the difference

      _____ the product

   b. What do you need to know about time?

      _____ A day has 24 hours.

      _____ An hour is greater than 15 minutes.

      _____ An hour equals 60 minutes.

   c. What else do you need to know about time?

      _____ A week has 7 days.

      _____ 45 minutes is greater than 15 minutes.

      _____ 30 minutes equals half an hour.

2. Michael Chen needs 4 boards the same size. He has one board 9 feet long. If he cuts the board up, how long will each piece be? answer _____

   a. What are you being asked to find?

      _____ How much is 9 minus 4.

      _____ How many times 4 goes into 9.

      _____ How much is 4 times 9.

b. What will you need to know how to do?

_____ multiplication

_____ division with remainders

_____ adding with renaming

c. The "same size" means ...

_____ subtract

_____ equal

_____ altogether

3. Flora Watson's chili recipe uses a 1 lb. 11 oz. can of red kidney beans. Monday she doubled her recipe. How many pounds and ounces of kidney beans did she use? answer _____

a. How would you solve this problem?

_____ There is only one way: adding.

_____ There is only one way: multiplying.

_____ I could solve it by adding or multiplying.

b. What do you need to know about pounds and ounces?

_____ That pounds and ounces are dry measures.

_____ That 16 ounces equals 1 pound.

_____ That 8 ounces are 1/2 of a pound.

c. What word in the problem told you what to do?

_____ doubled

_____ pounds

_____ use

4. Pete owns a gas station. He sells 12 quarts of oil a day. How many will he sell in a year?
answer _____

a. What do you need to know about time?

_____ That a day has 24 hours.

_____ That a year has 12 months.

_____ That a year has 365 days.

b. How will you solve this problem?

_____ divide

_____ multiply

_____ subtract

c. Which fact is important?

_____ Pete owns a gas station.

_____ 12 quarts make a dozen.

_____ 12 quarts are sold each day.

5. Last year the space shuttle was in space for 6 days, 21 hours, and 45 minutes. This year it spent 5 days, 14 hours, and 25 minutes in space. What was the total time it spent in space?
answer _____

a. What do you need to know about time?

_____ A day has 24 hours.

_____ A year has 365 days.

_____ Six days is less than a week.

b. What else do you need to know about time?

_____ A week has 7 days.

_____ There are 60 minutes in an hour.

_____ A half hour is more than 25 minutes.

c. What word in the problem told you what to do?

_____ spent

_____ total

_____ space

PART II

DIRECTIONS: Solve these problems.

1. The Sanchez family had a fish fry. They bought 1 pound 8 ounces of fish fillets. They had 2 pounds of halibut. Their friends bought 2 pounds 8 ounces of perch. How much fish did they have?
answer _____

2. Raymond fills his gas tank once a week. His tank holds 22 gallons. How many gallons does he buy in a year?
answer _____

3. A bus travels at 55 miles per hour. How long will it take to go 715 miles?
answer _____

4. This year it snowed 3 feet 11 inches. Last year it snowed 4 feet 9 inches. How much more did it snow last year?
answer _____

5. The Svecs made a Thanksgiving punch. They used 2 quarts of white wine, 1 quart of apple cider, 1 pint of apple juice, and 1 pint of cranberry juice. How much punch did they make?
answer _____

6. There are 462,567 books in Central Library. An inventory showed that 87,563 books had been checked out. How many books were left in the library?

answer _____

7. City newspaper sales went up by 33,830 readers one year. Suburban sales went up by 17,609. Sunday paper sales went up by 32,874 in the city and 12,429 in the suburbs. What was the total gain in sales?

answer _____

8. It takes Louis 12 minutes to jog a mile. If he runs for 84 minutes each week, how many miles does he run?

answer _____

9. Manual is paid $6 an hour. He worked for 36 hours last week. What was the total amount he earned?

answer _____

10. The Novaks water bill was $8. Their electricity was $23. The sewer bill was $4 and garbage collection $8. What was their total utility bill?

answer _____

11. Last year Mattie Roberts paid $564 to rent garage space for her car. How much did she pay each month?

answer _____

12. Anna's car payment was $127 each month. How much did she pay in 24 months?

answer _____

13 Frederick bought a new stereo receiver for $600. He also bought a new set of speakers for $245 and $25 worth of albums. What did he spend altogether?

answer _____

14. Your pulse is around 70 beats per minute. How much does your heart beat in an hour?

answer _____

15. Grapes cost 89¢ a pound. Mrs. Schwartz bought 3 pounds. What was the total cost?

answer _____

OBJECTIVE: To solve word problems involving averaging

AVERAGES AND WORD PROBLEMS

There are two kinds of averaging word problems. One kind has the words "on the average." These are simple division problems.

EXAMPLE: Rickie drinks 21 cans of pop a week. On the average, how many cans of pop does he drink a day?

$$7\overline{)21}$$ 3 cans each day

These problems can also be written with the words each or per.

EXAMPLES: Rickie drinks 21 cans of pop a week.
How many does he drink each day?

Rickie drinks 21 cans of pop a week.
How many does he drink per day?

The other kind of averaging word problem is a two-step problem. You must do both addition and division.

EXAMPLE: For four days the lowest temperatures were 30^{o}, 31^{o}, 36^{o}, and 35^{o}. What was the average lowest temperature for those days?

$$\begin{array}{r} 30^{o} \\ 31^{o} \\ 36^{o} \\ +\ 35^{o} \\ \hline 132^{o} \end{array} \qquad 4\overline{)132} \quad 33^{o}$$

Both kinds of problems are in the following exercise.

DIRECTIONS: Solve these word problems.

1. The basketball team played 6 games. They scored 83, 69, 70, 58, 53, and 87 points in those games. What was their average score?
answer _____

2. A car went 371 miles in 7 hours. What was its speed per hour?
answer _____

3. Tires were priced at $46, $45, $50, $56, and $58 for different models. What was the average price for a tire?
answer _____

4. The 4 Gray Panther leaders were 69, 89, 72, and 86 years of age. What was their average age?
answer _____

5. The GED has 5 tests. Joanna scored a total of 265. What was her average score?
answer _____

6. The Video store sells 4 kinds of T.V. sets. Each kind costs $397, $537, $549, or $649. What is the average cost?
answer _____

7. On Thursday, the temperature was taken in 6 cities. From the list below, find the average temperature.
answer _____

Atlanta	74^{o}
Boston	42^{o}
Charleston	73^{o}
Dallas	58^{o}
Las Vegas	66^{o}
Washington	47^{o}

8. Jorge Rivera bought 3 used cars to sell on his lot. He is selling them for $3,995, $1,995, and $2,794. What is their average price?
answer _____

9. A Greyhound bus travels 135,200 miles a year. How many miles does it travel per week?
answer _____

10. Roseanna went to the store. Here is her grocery list. What was the average cost of these items?
answer _____

1. 10 lbs. potatoes	99¢	2. 1 gal. milk	$1.89
3. 1 loaf wheat bread	89¢	4. 1 roll paper towels	69¢
5. 1 doz. eggs	79¢	6. 1 12 oz. can of juice	45¢
7. 1 lb. margarine	69¢	8. 1 pt. strawberries	$1.19

11. Mike bowled 168, 167, 205, and 176. What was his average score?

answer _____

12. Juanita's husband worked 35 hours, 40 hours, 37 hours, and 36 hours one month. What is the average number of hours worked?

answer _____

13. Samuel wrote 12 checks, 15 checks, 17 checks, 11 checks, 7 checks, and 16 checks each month for 6 months. What is his average number of checks each month?

answer _____

14. Mr. and Mrs. Waters have 4 charge accounts. Their monthly payments on each are $60, $47, $36, and $29. What is their average payment?

answer _____

15. A 60 minute tape has 20 songs. On the average, how long is each song?

answer _____

16. Kristen has coupons for 55¢, 50¢, 25¢, 30¢ and 15¢. What was the average amount for these coupons?

answer _____

17. A used car dealer had a 1982 Lincoln for $7,299. He had a 1976 Ford for $1,650, a 1979 Buick for $2,500, and a 1981 Dodge for $3,775. What was the average price of these 4 cars?

answer _____

18. The Raymonds use light bulbs which are 100 watt, 75 watt, 60 watt, 40 watt, and 150 watt. What is the average number of watts for these bulbs?

answer _____

19. Attendance at 3 soccer games was 27,300, 52,019, and 38,200. What was the average attendance ?

answer _____

20. There were 6 new students in the GED class. Their ages were 20, 26, 34, 41, 50, and 63. What was their average age?

answer _____

OBJECTIVE: To use estimation

ESTIMATES

An estimate is a guess. Some estimates are better than others. An estimate is just to give a general idea.

PART I

DIRECTIONS: Here are some estimates. After each, write an estimate from your own life.

1. It is about 10 blocks to the nearest hospital.

   _____

2. There were about 40,000 people at the last Bears game.

   _____

3. My friend Rosa is about 5 feet tall.

   _____

4. My groceries for the week will cost about $90.

   _____

5. A house payment will cost at least $400 per month.

   _____

6. It takes an hour or so to get to work.

   _____

PART II

DIRECTIONS: Make an estimate to the nearest $1.

1. The cost of a Polaroid camera _____
2. The price of a new pair of Levis _____
3. An average monthly car payment _____
4. The cost of an alarm clock _____
5. The price of a babysitter (per hour) _____

OBJECTIVE: To estimate answers

PART I

ESTIMATING THE ANSWER

When we shop or do business, we need to be able to make estimates in our head.

EXAMPLE 1: Here is a deal on a used van: Only $69.95 a month for 4 years.
Is it worth it?

We don't have our calculator or pencil and paper.

Think: $69.95 is like $70.

A year is 12 months; that's like 10. 10 x $ 70 = $700

Four years, so 4 x 700 = $ 2,800

If it seems worth that much, you can figure more closely.
If it doesn't seem worth that much, keep looking!

Rules for estimating are not exact, like rules for rounding.
The only rule is,

CHANGE IT SO IT IS EASY ENOUGH TO DO IN YOUR HEAD.

Here are some more examples.

EXAMPLE 2: I have a $20 bill. In my grocery basket are a gallon of milk ($1.99), a chicken ($2.89), 4 bell peppers ($1.19), cheese ($3.19), deodorant ($2.89), toilet paper ($1.59). Can I afford a six-pack of cola?

Solution: Round everything off to the nearest dollar and throw something in for tax. Say milk, $2; chicken, $3, that's $5 so far. Plus $1 for peppers, that's $6. Cheese, $3, that's $9; deodorant $3, total $12. And toilet paper $2, so $14. Add a dollar for tax, and that's $15, and $15 from $20 leaves $5, so YES! I have plenty left for a six-pack of cola.

EXAMPLE 3: At $7.85 per hour, Mae worked 49 hours. About how much will she make?

Call it 50 hours x $7 per hour = $350

Or call it 40 hours at $8 per hour = $320

Both are good estimates. Let's see what the actual value is. Multiply:

$$\begin{array}{r} \$\ 7.85 \\ \times\quad 49 \\ \hline \end{array}$$

PART II

DIRECTIONS: To answer these questions, DO NOT COMPUTE! Just make your best guess. Choose easy numbers.

Fill in the blanks:

1) If a jacket is on sale for $37.95, we might as well think $40.

2) If a pound of mushrooms costs $1.89, we might as well think _____.

3) If Jane buys a blouse for $13.95 and a pair of panty hose for $1.99, it will take most of a _____ bill.

4) Sue has $10. If she gets $5 worth of gas and a car wash, can she afford to go to the movie?_____

5) At 50 cents each, how many Boy Scouts can go to the museum for $29?_____

PART III

DIRECTIONS: Here are some problems. DO NOT WORK THEM. Change them to something easy enough to do in your head and work that problem. The first two have been done for you.

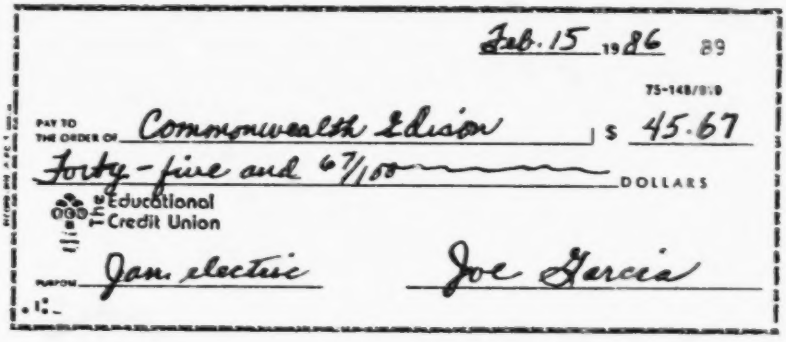
	Problem	Think		Estimate
1)	$497 x 24 payments	$500 x 20	=	$ 10,000
2)	half of $ 79.25	$ 80 ÷ 2	=	$ 40
3)	39 doubled	_____	=	_____
4)	$17.69 + $43.07	_____	=	_____
5)	965 ÷ 19	_____	=	_____
6)	average of 17 and 39	_____	=	_____
7)	40 hours X $5.15 per hour	_____	=	_____
8)	4 dozen eggs @ $1.29	_____	=	_____

Writing Checks

Many people pay their bills with checks. We will learn how to write checks correctly.

Example : Joe Garcia paid his light bill with a check. It was made out to Commonwealth Edison for $45.67. Joe had to write the amount in both words and numbers so no one could change it. (He drew a line to finish filling in the blank where the amount goes.)

He also had to put the date and sign his name. Study the example below.

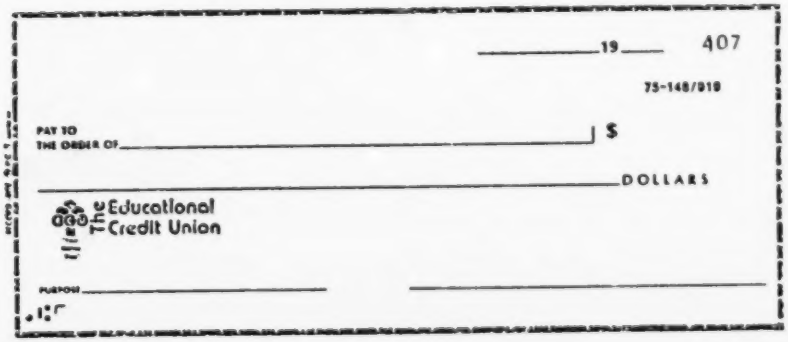


DIRECTIONS: Pretend that you are paying a car payment by check. You will put today's date. You will sign your own name. Write carefully and neatly.

Make the check out to National Credit Company. (You can shorten "Company" to "Co." if you wish.)

The amount will be $127.68. Write it in numbers. Also write it in words: "One hundred twenty-seven dollars and 68/100." (Some people write "One hundred twenty-seven dollars and sixty-eight cents." This is okay too.)

Fill in the check below.



KEEPING A BANK ACCOUNT

PART I

CHECK-WRITING

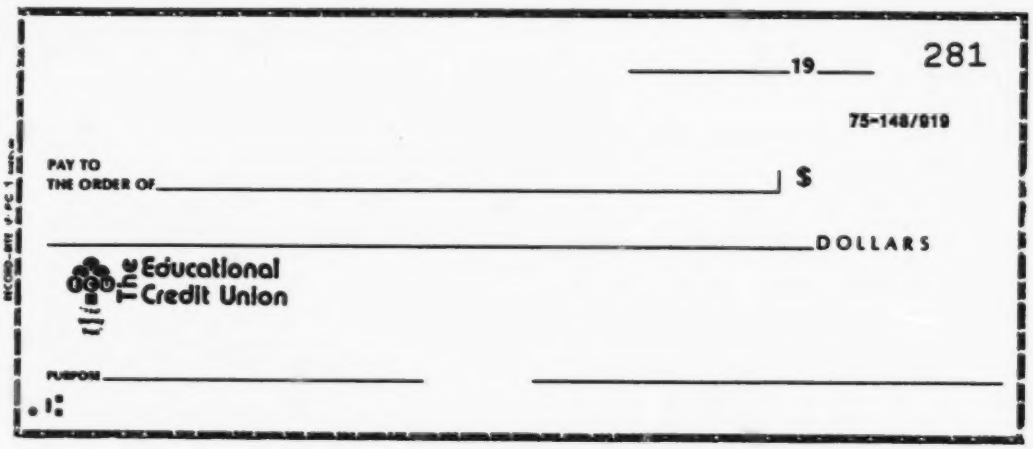
Here is information for three checks you are to write. Use your own name and today's date. (You will use this same information in PART II.)

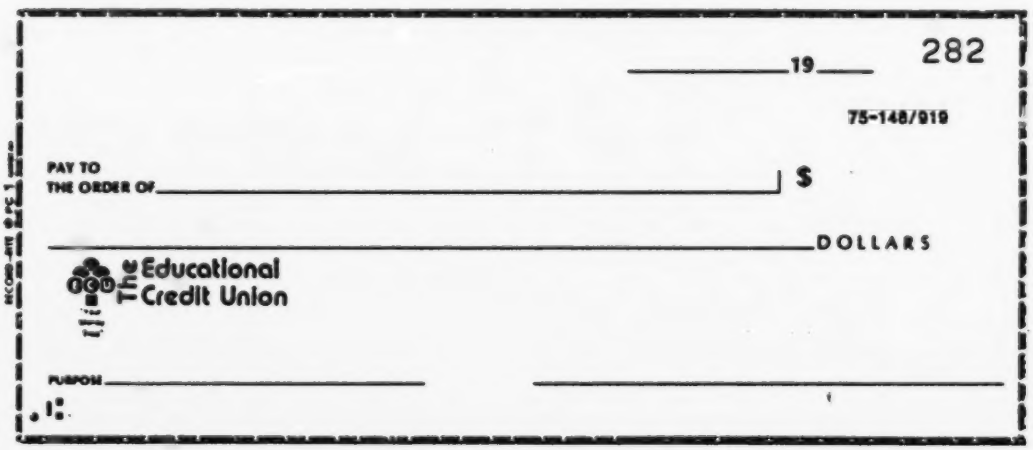
Write as neatly as you can.

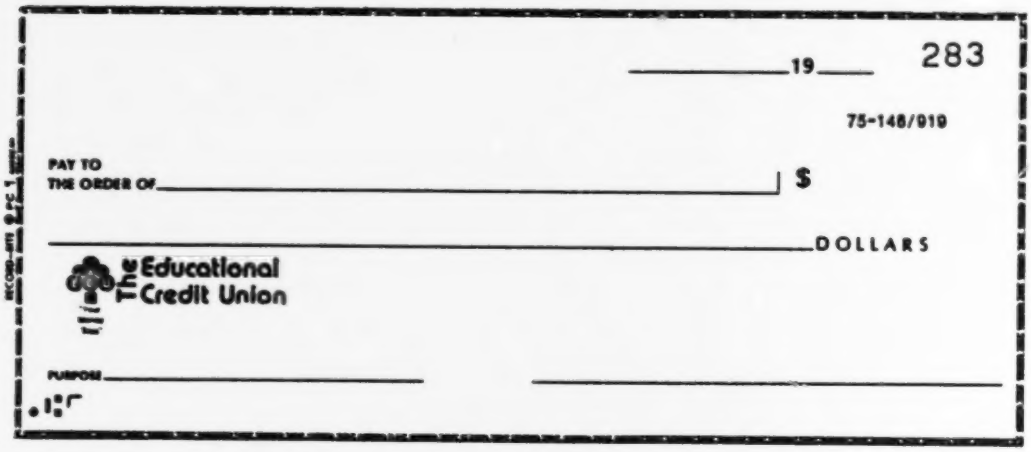
Check # 281. For this month's rent, pay to Salk Realty Company, $320.00.

Check # 282. For a coat, pay to Sears the amount of $76.53.

Check # 283. For the month's gas bill, pay to People's Gas, $65.09.







Did you remember to write the purpose on all 3 checks and sign them? We don't print our names, but use cursive writing. That is because each person's signature is different. So it is hard to copy someone else's signature. This protects our money.

How much did you spend in all? _____

Suppose you started with $613.50 in the bank. How much do you have left? _____

How much rent would you pay to Salk Realty in a year's time? _____

You need to have a nice, neat signature for signing checks. On the lines, practice your signature.

_____

_____

_____

_____

_____

PART II

KEEPING A REGISTER

We need to keep up with how much money we have in the bank. At the bottom of this page is a check register.

There is a column called "Balance Forward." This means how much money you started with. We wrote $613.50 there.

There is a place to record each check:

Date	Number	Transaction Description	Amount of Payment	Balance Forward

(There are some other columns too, but we don't need them yet.)

In "Transaction description" we write who we paid the check to. "Amount of payment" tells how much the check was for.

Then we subtract, and write the new "Balance forward"--how much is left after that check.

EXAMPLE: **Check # 281** has been recorded for you. Write the date you used. Then study the entry. We subtracted $320 on scratch paper to get the new balance forward.

DIRECTIONS: Record the other two checks you wrote. After each, subtract and find the new balance forward.

DATE	NUMBER	TRANSACTION DESCRIPTION	(+ OR −) OTHER	✓ T	(+) AMOUNT OF DEPOSIT	(−) AMOUNT OF PAYMENT OR WITHDRAWAL	BALANCE FORWARD
							$613.50
	281	Sack Realty				320 00	293 50

PART III

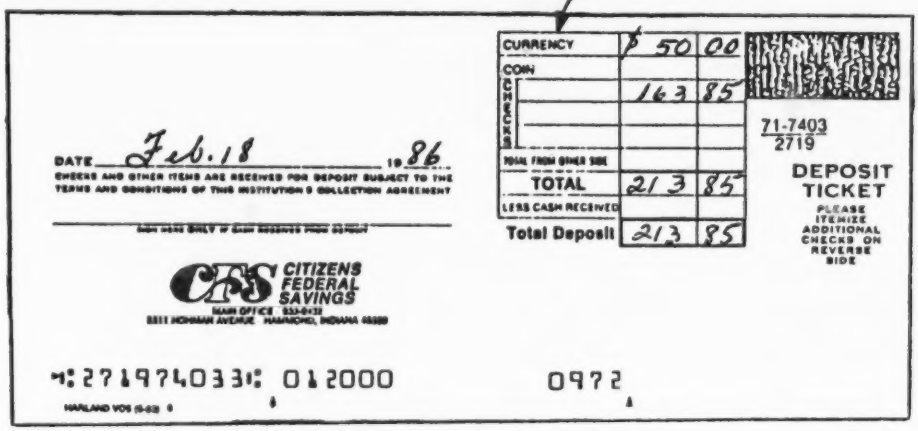
MAKING DEPOSITS

Before we can write checks, we have to have money in the bank. How does it get there? We make deposits.

Dave is going to deposit his paycheck of $163.85 from Gordon Bus Company. He's also going to deposit $50 cash he made driving a dump truck on the weekend.

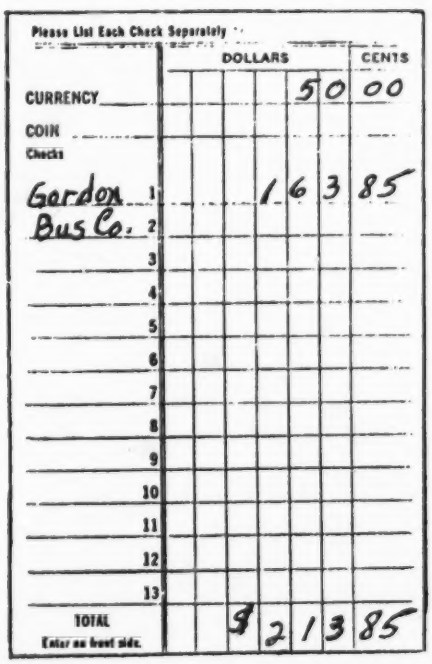
This is the front of the deposit slip.

(currency means cash)



This is the back of the deposit slip.

If you have more than one check to deposit, the bank wants you to list each of them on the back. We will write Dave's check here.



203

Fill out this deposit slip with your own name, today's date and the information given.

1) cash (currency means bills) of $45

2) coins: a $10 roll of quarters, and 37¢ in loose change

3) a birthday check from your aunt for $25.00

4) a paycheck from City of Chicago for $283.17

Fill out the back first, find the totals, then fill out the front.

Please List Each Check Separately by Financial Institution Number

	DOLLARS	CENTS
CURRENCY		
COIN		
Checks 1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
TOTAL Enter on front side.		

DATE _____ 19 ____

CHECKS AND OTHER ITEMS ARE RECEIVED FOR DEPOSIT SUBJECT TO THE TERMS AND CONDITIONS OF THIS INSTITUTION'S COLLECTION AGREEMENT

SIGN HERE ONLY IF CASH RECEIVED FROM DEPOSIT

CFS CITIZENS FEDERAL SAVINGS
MAIN OFFICE 933-0433
5311 HOHMAN AVENUE HAMMOND, INDIANA 46320

CURRENCY		
COIN		
CHECKS		
TOTAL FROM OTHER SIDE		
TOTAL		
LESS CASH RECEIVED		
Total Deposit		

71-7403
2719

DEPOSIT TICKET

PLEASE ITEMIZE ADDITIONAL CHECKS ON REVERSE SIDE

⑈271974033⑈ 012000 0972

HARLAND VOS (5-83)

204

MAKING WITHDRAWALS

Sometimes we put our check in the bank, and then find that we need cash to buy gas for the car or to go to the movies. If the bank is open, we can withdraw some of the money we deposited before. A withdrawal slip is much like a check. We have to write the date and our signature. We have to write the amount in two ways: in numbers and in words.

EXAMPLE: Anna Ghizetti withdrew cash of $65.00. Here is her withdrawal slip.

WITHDRAWAL
RECEIVED FROM

CITIZENS BANK
404 Mobile Street Chicago, Illinois 60611
312/572-8600

BFC FORM 82715
4-5-50-05

ACCOUNT NUMBER 24715

AMOUNT WITHDRAWN $ 65.00

DATE March 10, 1986

AMOUNT WITHDRAWN sixty-five dollars DOLLARS
(WRITE AMOUNT IN WORDS)

NAME Anna Ghizetti
SIGNATURE OF DEPOSITOR

ADDRESS 1560 W. Addison St.

SIG. APPROVED

⑆5048⑈5000⑆

DIRECTIONS: Fill out this withdrawal slip with your own signature and today's date. The amount to be withdrawn is $125.

WITHDRAWAL
RECEIVED FROM

CITIZENS BANK
405 Mobile Street Chicago, Illinois 60611
312/572-8600

BFC FORM 82715
4-5-50-05

ACCOUNT NUMBER 47168

AMOUNT WITHDRAWN $

DATE _____

AMOUNT WITHDRAWN _____ DOLLARS
(WRITE AMOUNT IN WORDS)

NAME _____
SIGNATURE OF DEPOSITOR

ADDRESS _____

SIG. APPROVED

⑆5048⑈5000⑆

BANK CHARGES

Each month the bank will send you a statement showing the amount of deposits, checks and withdrawals. There are also "other charges." What are they?

A. The bank gets paid for keeping up with your money. You pay for the checks, and the bank may also charge you a "Service Charge" each month. It may be $5, $7 or $10. The bank will make a note of it on your bank statement, probably with the note "SC" for "Service Charge."

B. If you write a check, and you do not have enough money for it, the bank will first send it back to the person you wrote it to, marked "Insufficient Funds." They will send you a note about it in the mail, so that you can come in and deposit some more money. Then they will charge you a fee. It may be $5, $10, or $12. On your monthly statement they will make a note of it, with the letters "NSF", for Not Sufficient Funds.

EXAMPLE: Below is a check register. Study it carefully. In it is recorded these facts.

1. Balance forward was $450.23
2. Deposit made of $190.45. (What was the balance forward then? _____)
3. **Check # 47** written for the electric bill for $89.47. (What was the balance forward then? _____)
4. Bought new checks, bank charged $8
5. Cash withdrawal of $60 (Balance forward? _____)
6. A mistake was made when check # 48 was written, so it was torn up. Then we wrote "Void" by #48. (What is the balance now? _____)
7. **Check # 49** to Gurney's Groceries, $63.45
8. What is the last balance forward? _____

NUMBER	DATE	CHECKS ISSUED TO OR DESCRIPTION OF DEPOSIT	(−) AMOUNT OF CHECK		✓ T	(−) CHECK FEE (IF ANY)	(+) AMOUNT OF DEPOSIT		BALANCE	
									450	23
	Jul 1	TO FOR Deposit (paycheck)					$ 190	45	+ 190	45
									640	68
47	Jul 3	TO FOR Commonwealth Edison	$ 89	47					− 89	47
									551	21
	Jul 6	TO FOR Check charge				$ 8			− 8	00
									543	21
	Jul 7	TO FOR Withdrawal	60	00					− 60	00
									483	21
48		TO FOR VOID							− 0	
									483	21
49		TO FOR Gurney's Groceries	63	45					− 63	45
									419	76

PART IV

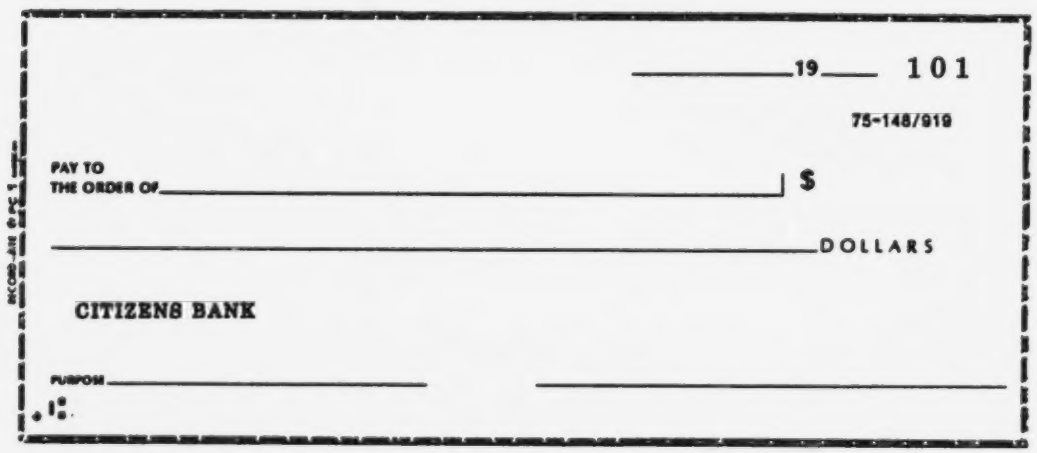
Use the next few pages to carry out these bank transactions. You will do each of these in turn.

In each transaction, use your own name, and begin with today's date.

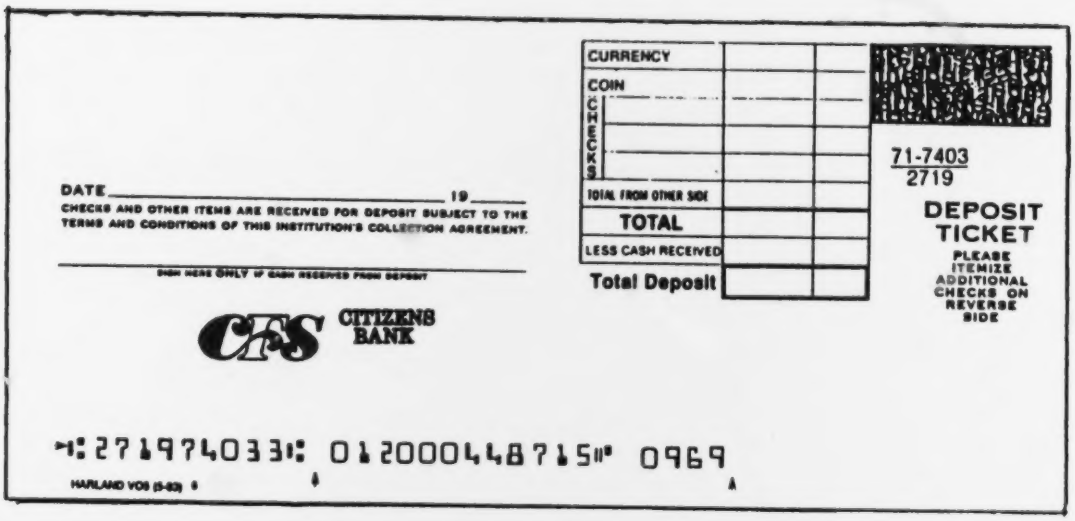
Keep a record in the Check Register at the end of this section as you go and always find the new Balance Forward.

1. Start with a Balance Forward of $126.73
2. Write a check for $59.12 to Sears for washing machine payment.
3. Deposit CTA paycheck of $206.42
4. The bank statement says there was a Service Charge of $7.50.
5. Withdraw $50 cash for the weekend.
6. Make a deposit: income tax refund of $38.92; a money order of $40 from your brother, paying back a loan; and 2 $10 bills.
7. Write a check to City Mortgage Co. for $275.30 for house payment.
8. Write the Balance Forward.

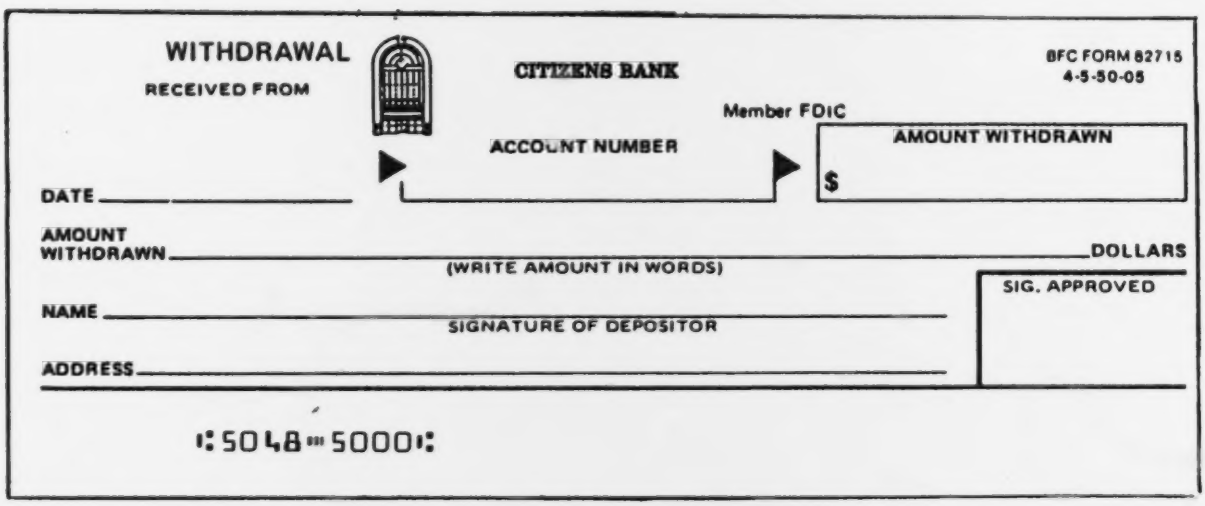
CHECK



Deposit slip



Withdrawal slip



Deposit Slip (front)

DATE _____ 19___

CHECKS AND OTHER ITEMS ARE RECEIVED FOR DEPOSIT SUBJECT TO THE TERMS AND CONDITIONS OF THIS INSTITUTION'S COLLECTION AGREEMENT

SIGN HERE ONLY IF CASH RECEIVED FROM DEPOSIT

CITIZENS BANK

CURRENCY		
COIN		
CHECKS		
TOTAL FROM OTHER SIDE		
TOTAL		
LESS CASH RECEIVED		
Total Deposit		

71-7403
2719

DEPOSIT TICKET

PLEASE ITEMIZE ADDITIONAL CHECKS ON REVERSE SIDE

⑆271974033⑆ 01200 0968

HARLAND VOS (5-83)

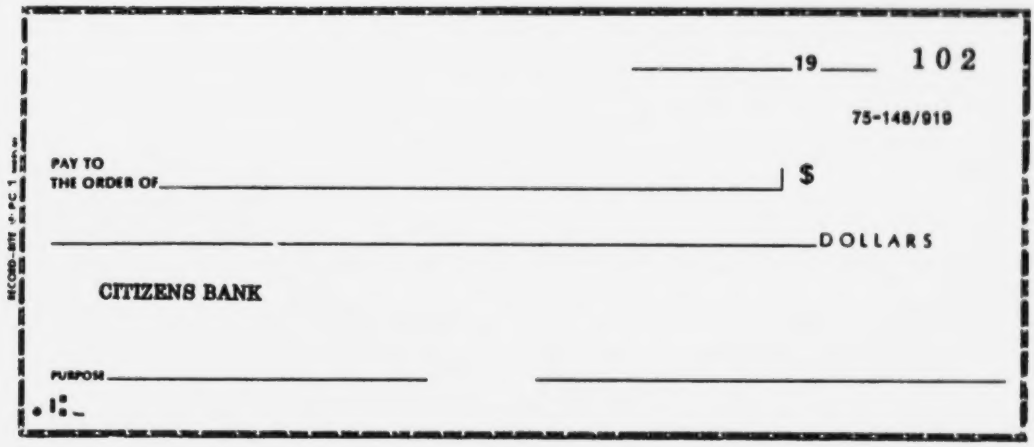
Deposit slip (back)

Please List Each Check

	DOLLARS	CENTS
CURRENCY		
COIN		
Checks by Financial Institution No.		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
TOTAL Enter on front side.		

209

Check



_____ 19____ 102

75-148/919

PAY TO
THE ORDER OF _____ $

_____ DOLLARS

CITIZENS BANK

PURPOSE _____

Check register

NUMBER	DATE	CHECKS ISSUED TO OR DESCRIPTION OF DEPOSIT	(−) AMOUNT OF CHECK		✓ T	(−) CHECK FEE (IF ANY)	(+) AMOUNT OF DEPOSIT		BALANCE	
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								
		TO/FOR								

OBJECTIVE: To interpret simple graphs

BASKETBALLS FOR SALE

Key
= 20 basketballs

Month	Number of Basketballs
January	10
February	8
March	5
April	7
May	6
June	10
July	9
August	7
September	5
October	6
November	4
December	3

A picture graph uses pictures to show numbers. There is a key used to tell the value of each number in the picture.

PART I

A. DIRECTIONS: Answer the following questions by using the picture graph above.

1) How many basketballs were sold in January? ($\frac{1}{2}$ of 20 = 10)

2) In which month were the most basketballs sold?

3) In which month were the least basketballs sold?

4) How many basketballs were sold in June and July?

5) How many basketballs were sold in December?

6) How many basketballs were sold in March and April?

7) How many basketballs were sold for the whole year?

AIRPLANE DEPARTURES ON HOLIDAYS

HOLIDAYS	NUMBER OF DEPARTURES
New Year's Day	
Easter	
Memorial Day	
Independence Day	
Labor Day	
Thanksgiving Day	
Christmas	

KEY
= 50 departures

B. DIRECTIONS: Use this picture graph to answer the following questions.

1) What holiday did the least number of airplanes depart?

2) On what holiday did the most airplanes depart?

3) How many airplanes departed on Memorial and Labor Day together?

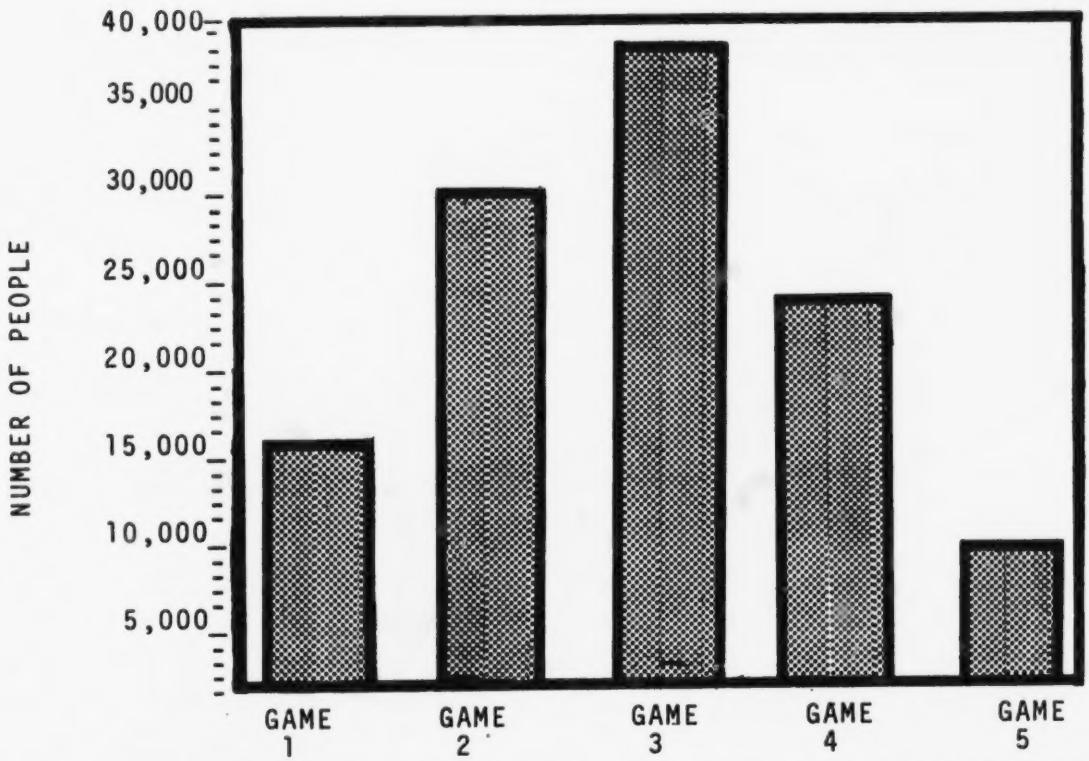
4) Did more planes depart on Memorial or Labor Day?

5) How many planes departed on Christmas?

6) How many planes departed on Easter?

7) How many planes departed on all 7 holidays together?

ATTENDANCE AT FOOTBALL GAMES



A bar graph uses bars to show numbers according to the length of the bar. There is a number line used to tell how much each bar represents.

PART II

A. DIRECTIONS: Answer the following questions by using the bar graph above.

1) How many people attended game 1?

2) How many people attended game 5?

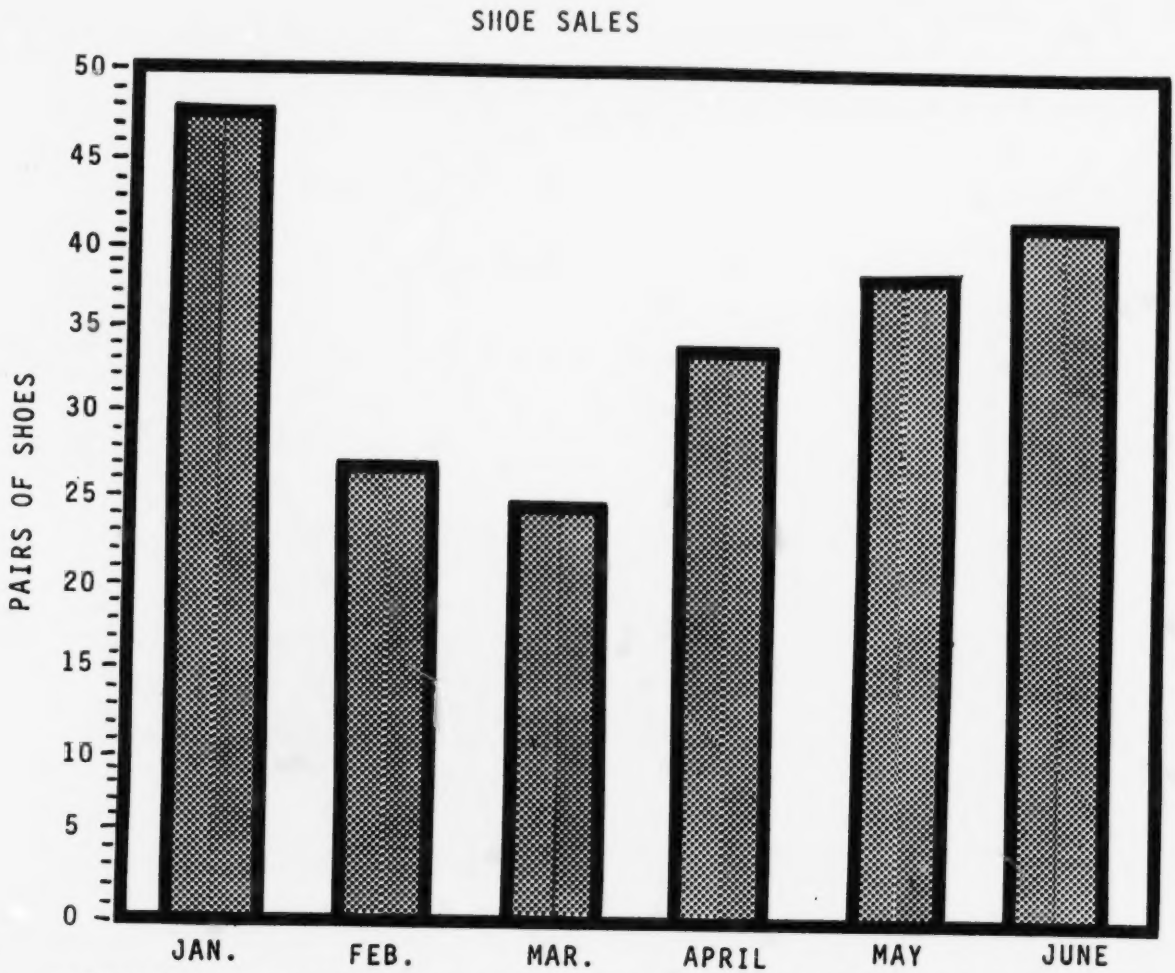
3) How many more people attended game 2 than game 1?

4) How many more people attended games 3 and 4 than games 1 and 2?

5) Which game had the lowest attendance?

6) Which game had the highest attendance?

7) What was the total attendance for all 5 games?



B. DIRECTIONS: Use the bar graph to answer the following questions.

1) How many shoes were sold in February?

2) Can you tell by looking at the graph when the lowest number of shoes were sold?

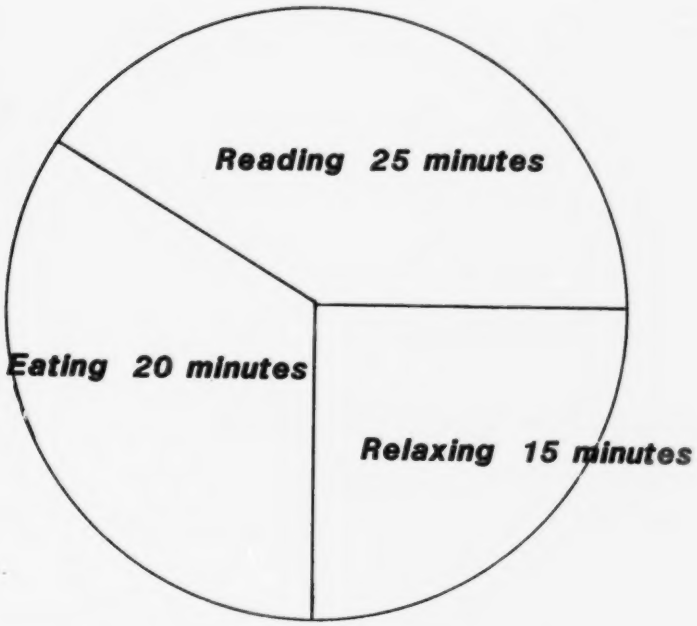
3) In what month were the most shoes sold?

4) How many shoes were sold in March, April and May together?

5) How many shoes were sold in January?

6) Were the most shoes sold in June or March?

7) How many shoes were sold altogether?



Ralph's Lunch Break

1 Hour

A circle graph uses the size of a section to show amount. Labels tell what and how much each section represents.

PART III

A. DIRECTIONS: Answer tne following questions by using the above circle graph.

1) How many minutes does Ralph spend reading?

2) How many minutes does Ralph spend relaxing?

3) Does Ralph spend more time eating or relaxing?

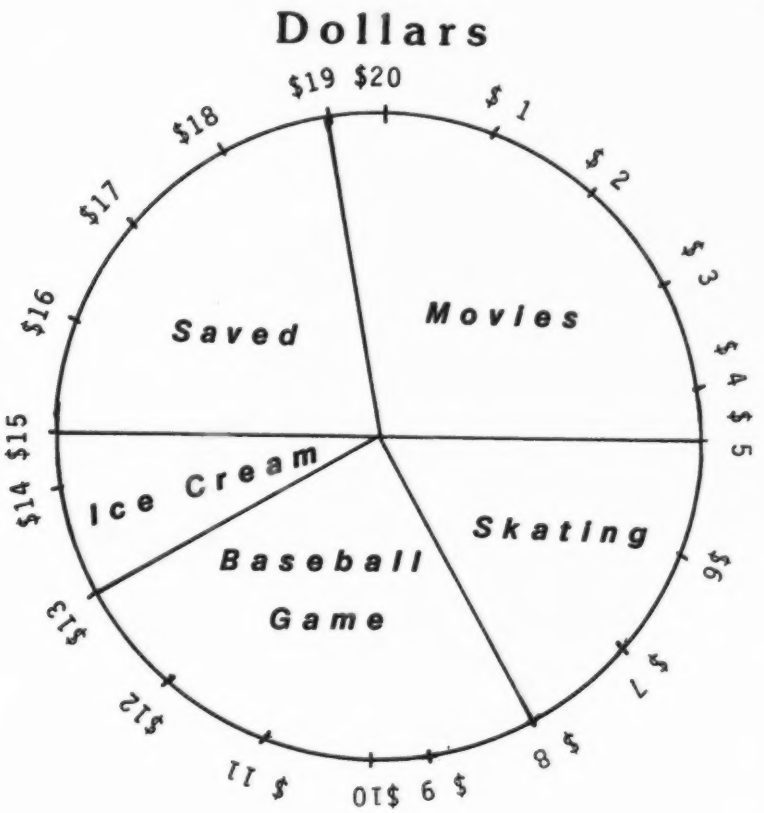
4) What does Ralph spend more time doing?

5) How many minutes does Ralph spend eating and relaxing?

6) What does Ralph spend the least amount of time doing?

7) How many minutes is Ralph's lunch break?

How Brian Spent His Allowance



B. DIRECTIONS: Use this circle graph to answer the following questions.

1) How much did Brian spend on skating?

2) What did Brian spend most of his money doing?

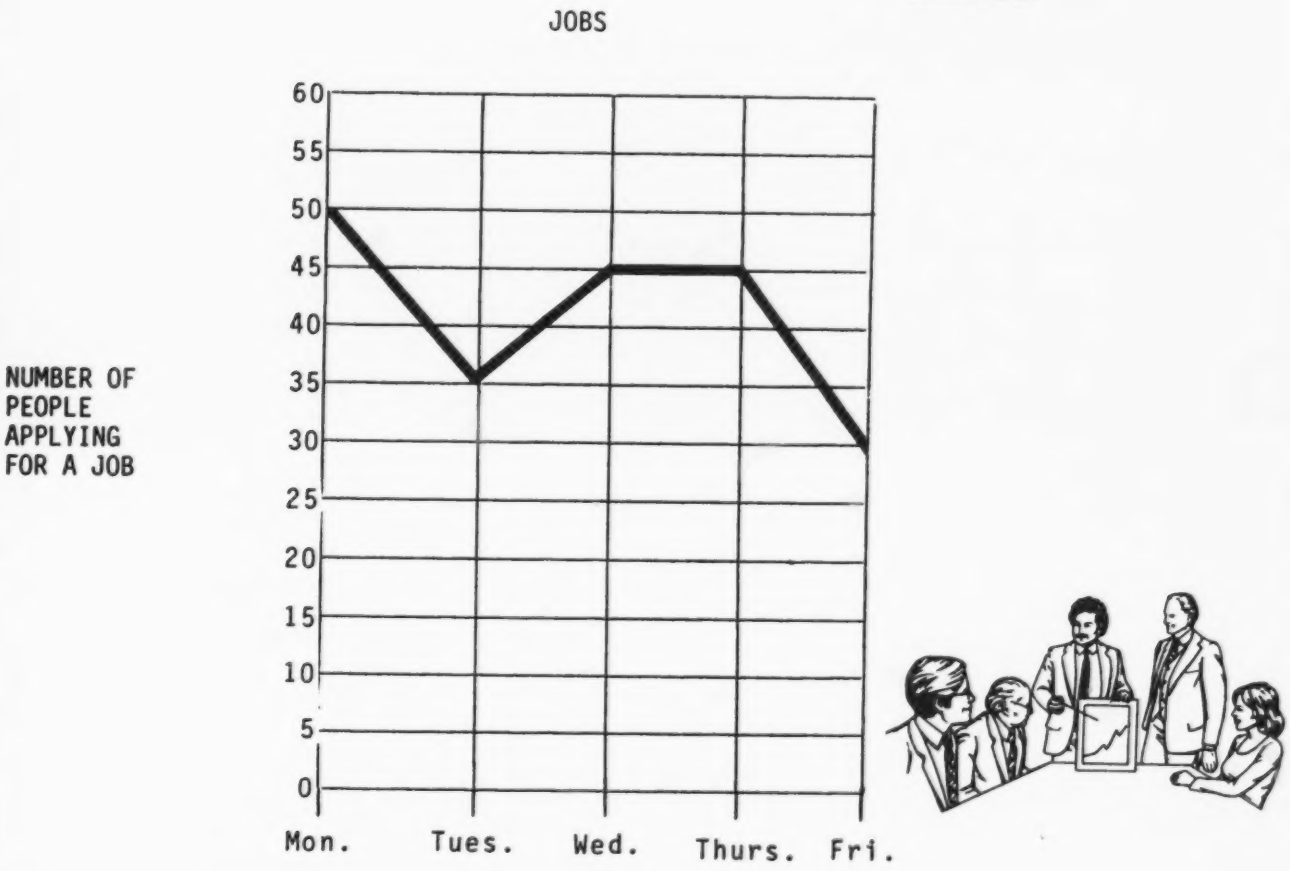
3) Did Brian spend more on the movies or the baseball game?

4) How much did Brian save?

5) What did Brian spend the least amount of money on?

6) How much did Brian spend on ice cream and skating together?

7) How much did Brian get for his allowance?



A line graph uses points on a line to show numbers. It is like reading a number line to find what each point represents.

PART IV

A. DIRECTIONS: Answer the following questions by using the line graph above.

1) How many people applied for the job on Friday?

2) On what day did the most people apply for the job?

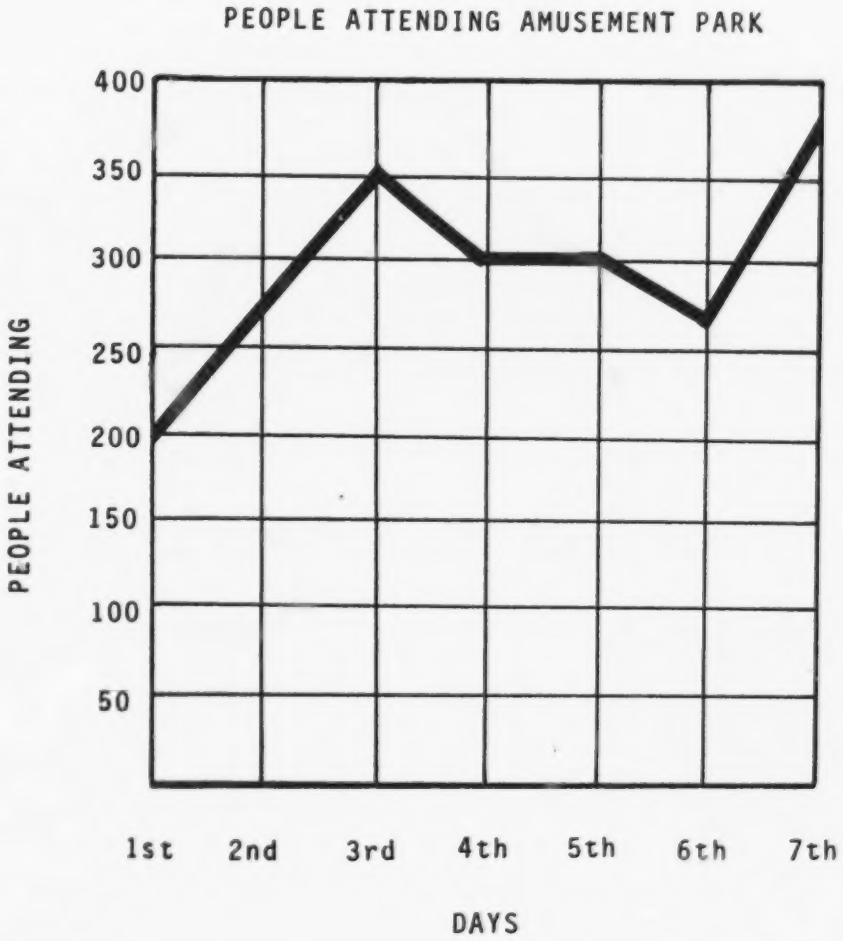
3) Did more people apply for the job on Tuesday or Thursday?

4) On what day did the smallest number of people apply for the job?

5) How many people applied for the job on Tuesday and Thursday together?

6) On what days did the same number of people apply?

7) How many people applied for the job in the 5 days?



B. DIRECTIONS: Use this line graph to answer the following questions.

1) How many people attended the park on the 4th day?
2) Did more people attend the park on the 4th or 5th day?
3) On what day did the least number of people attend the park?
4) What day did the most people attend the park?
5) How many attended on the 1st, 3rd and 5th days together?
6) On what 2 days did the same number of people attend?
7) How many people attended all 7 days together?

OBJECTIVE: To solve two-step word problems involving the four basic operations

FIRST ONE STEP, THEN THE OTHER

Some word problems have two steps. You will have to do more than one operation to solve the problem. Finding the average is a two-step problem. You have to add, then divide.

There are other kinds of two-step problems.

EXAMPLE:

Renaldo spent $56 on food one week. The next week he went to the store twice. He spent $32 on Monday and $28 on Thursday. How much more did he spend the second week?

Step 1: First week = $56
Second week = $32 (Monday) + $28 (Thursday)

$$\begin{array}{r} \$32 \\ +\$28 \\ \hline \$60 \end{array}$$

Second week = $60

Step 2:

$$\begin{array}{rl} \$60 & \text{Second week} \\ -\$56 & \text{First week} \\ \hline \$\ 4 & \text{How much more Renaldo spent the second week} \end{array}$$

This problem really has two questions. One comes at the end of the problem. This is the question you write an answer to. How much more did he spend the second week? The answer was $4!

Yet there was another question. This question was hidden in the problem. You had to ask this question of yourself. It has to be answered first before the other. How much did Renaldo spend the second week? That fact was not given to you. You had to add up Monday's and Thursday's costs to find it, $32 + $28 = $60. You use it to find the final answer.

All two-step word problems have two questions or missing facts. One is your final question. The other you answer along the way.

PART I

DIRECTIONS: Read each problem carefully. Find the two steps. Write both steps on the lines given. Then write the answer. The first one has been done for you.

1. Mr. Katz worked in a mail room in Sears Tower. Each day he spent 50, 35, 25, 40, and 30 minutes delivering letters to different companies. How many hours did he work? (Remember 60 minutes = 1 hour.)

First Step 50+35+25+40+30+=180 minutes (Add)
Second Step 180 ÷ 60 = 3 (Divide)
Answer 3 hours

2. At the end of the first year the car's mileage was 10,890 miles. At the end of the second year it was 23,285 miles. At the end of the third year it was 35,877 miles. Was the car driven more the second year or the third year?

First Step _____
Second Step _____
Answer _____

3. The Janocek's bought a color TV for a total of $580. They paid $100 down. The rest they paid in 12 monthly payments. How much would they pay each month?

First Step _____
Second Step _____
Answer _____

4. One year Maurice earned a total of $14,500. The next year he made $12,850 in wages and $2,386 in overtime. How much more did he earn the second year?

First Step _____
Second Step _____
Answer _____

5. The Green Triangle Health Plan pays $40 a day or $1,200 a month for a hospital stay. Hedy Bergaman was in the hospital for 1 month and 23 days. How much did the Plan pay?

First Step _____
Second Step _____
Answer _____

6. The Robinson family bought a sofa set on credit. The price of the set was $700. The credit plan was for payments of $66 for 12 months. How much more would they pay on credit?

First Step _____
Second Step _____
Answer _____

7. Mr. Cooper takes home $820 a month. Last month the Coopers spent $105, $85, $92, and $106 for food. How much money was left for other things?

First Step _____
Second Step _____
Answer _____

8. Alvera earns $6.00 an hour. She works 40 hours a week. One week she made $27 in overtime. How much did she earn for that week?

First Step _____
Second Step _____
Answer _____

9. Throw-away diapers were on sale. They cost $4 for 2 boxes. Andre and Cecilia bought 3 boxes. What was the total cost?

First Step _____
Second Step _____
Answer _____

10. The Neighbors' Club was having a picnic. The club put aside $20 for hot dogs. They bought 15 dozen hot dogs for 80¢ a dozen. How much money did they have left?

First Step _____
Second Step _____
Answer _____

PART II

DIRECTIONS: Solve the following problems.

1. Women's tennis shoes were on sale for $14. Children's were on sale for $11. Mrs. Munro bought a pair of shoes for herself and a pair of shoes for each of her 3 children. How much did she spend?

answer _____

2. A hot dog stand on the west side brings in $132 a day. One on the south side brings in $936 a week. Which one earns more? How much more?

answer 1 _____ answer 2 _____

3. Rick was selling his motorcycle, a 1982 750 Honda Nighthawk, for $1,875. Carlo was selling his Nighthawk for $1,995. Rick and Carlo had each paid $3,000 for their bikes in 1982. How much less was each bike worth?

answer 1 _____ answer 2 _____

4. Michelle pays $4,200 toward her mortgage each year. She pays another $110 a month in assessments. What is her total bill each month?

answer _____

5. For a week in June, Chicago temperatures were: 75, 80, 84, 86, 91, 92, 87. What was the average temperature?

answer _____

6. Enrico's new car gets 43 miles per gallon on the highway. It gets 24 miles per gallon in the city. Enrico drove 258 miles in the country on 6 gallons of gas. He then drove 72 miles in the city. How many gallons of gas did he use altogether?

answer _____

7. Joyce scored a total of 253 points on the GED Test. Juanita scored 45, 52, 53, 46, and 49 on her 5 sections of the GED Test. What was the difference between her total and Joyce's?

answer _____

8. The School Board was faced with a $62,600,000 deficit. It made $52,900,000 worth of cuts in the budget. The Board also gained $9,900,000 more in taxes and aid. How much over the deficit did they end up?

answer _____

9. There are 2 hotels in Paxton. Hotel Raindrop charges $33 a night. Dew Drop Inn charges $29 a night. May Lee stayed at the Raindrop for 7 nights. Mary Ann March stayed at the Dew Drop for 7 nights for $203. What was the difference in their bills?

answer _____

10. Marlene's take-home pay last year was $13,500. She and her two children used the money as follows:

Savings	$ 800	Rent	$3,000
Clothing	$1,017	Food	$2,500
Car	$2,100	Medical	$ 219

How much was left over for fixing up the apartment and fun?

answer _____

11. Harold was on a diet. He had to limit himself to 1,200 calories a day. On Monday he ate 2 small biscuits for 109 calories. He also ate a banana for 132 calories and half a cantaloupe for 30 calories. A hamburger for lunch on rye was 260 calories. Chicken for dinner with peas and corn was 300 calories. He also had a glass of milk and slice of cake for 296 calories. Did he stay under his limit?

answer _____

12. A person should take in 15 calories daily per pound of body weight. How much do you weigh? How many calories more or less should you need than Harold? (See Problem 11.)

answer _____

13. A stereo system costs $1,242. Fred, Mark, and Dean want to split the cost 3 ways. Each has $375. How much more does each need to make the total?

answer _____

14. The price of a new color T.V. is $564. The McIlvoy family bought the T.V. on credit. The 12 monthly payments were $51.50 each. How much more did the T.V. cost?

answer _____

15. Chuck roast is on sale for 75¢ a pound. The butcher will trim, debone and roll the roast. He charges 25¢ for the service. Mrs. Vargas bought a 4 pound roast for $3 and gave it to the butcher. How much did the roast cost altogether?

answer _____

16. When Rosa quit her job, her last paycheck had two weeks wages at $360. She was also paid for 5 sick days she did not take at $36 per day. What was her total check?

answer _____

17. Mr. Farnworth's dental insurance pays $500 a year total for the whole family. It pays $18 per filling. Mr. Farnsworth had 2 fillings done. Mrs. Farnsworth had 1 and their son, Rick, had 3. Rick's sister, Tess, had 2 and little Eddie had 4 done. How much insurance money was left?

answer _____

18. The Rinaldi family bought a dinette set for $259. They also bought 2 additional chairs at $45 each. What was the total cost of the set?

answer _____

19. A grant of $105,000 was given to 5 GED programs in Chicago. GED programs in Peoria got $18,500 each. How much more did a Chicago program get than a Peoria program?

answer _____

20. In 1978, 494,888 students were in the Chicago Public Schools. They were as follows:

Black, non-Hispanic	299,590
White, non-Hispanic	106,581
Hispanic	79,526
Asian/Pacific Islander	8,437
American Indian/ Alaska Native	?

How many were American Indian/Alaska Native?

answer _____

OBJECTIVE: To use tables and charts

SCOREBOARD: CUBS AND SOX

Cub Averages

Batting	G	AB	R	H	2B	3B	HR	RBI	GW
Sandberg	144	590	107	185	32	17	19	80	8
Matthews	137	464	94	136	20	3	12	73	16
Dernier	133	497	87	142	24	5	3	32	5
Durham	125	435	81	123	28	2	21	87	14
Moreland	129	452	53	127	16	3	15	76	11
Davis	139	487	54	125	23	2	19	90	6
Cey	134	463	69	110	24	0	25	93	7
Bowa	124	364	29	78	14	2	0	16	1

G = Games Played
AB = At bats
R = Runs
H = Hits
2B = Doubles
3B = Triples
HR = Home Runs
RBI = Runs Batted In
GW = Game Winning RBI

SOURCE: Chicago Tribune, Sept., 15, 1984.

A. DIRECTIONS: Use the chart above to answer the following questions.

1. How many hits did Bowa have? _____
2. How many doubles did Sandberg have? _____
3. Who played the most games for the Cubs? _____
4. How many triples did Cey have? _____
5. Who had the most RBI's for the Cubs? _____
6. How many hits did Dernier have? _____
7. How many at bats did Durham have? _____
8. Who had the most home runs for the Cubs? _____
9. How many hits did Davis have? _____
10. How many triples did Sandberg have? _____

Sox Averages

Batting	G	AB	R	H	2B	3B	HR	RBI	GW
Baines	132	511	60	153	26	8	24	82	16
Walker	122	392	56	116	24	2	23	69	5
Fletcher	134	411	42	106	13	3	3	33	9
V. Law	137	439	56	113	16	2	16	53	4
R. Law	125	454	63	112	12	7	4	31	1
Luzinski	122	404	47	98	13	0	13	57	11
Kittle	126	422	62	91	14	0	29	67	3
Cruz	132	331	37	80	14	3	5	41	6

G = Games Played
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R = Runs
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3B = Triples
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GW = Game Winning RBI

SOURCE: Chicago Tribune, Sept., 15, 1984.

B. DIRECTIONS: Use the chart above to answer the following questions.

1. How many home runs did Baines have? _____
2. How many triples did R. Law have? _____
3. How many games did Kittle play? _____
4. Who had the most triples for the Sox? _____
5. Who had the most at bats for the Sox? _____
6. How many hits did Fletcher have? _____
7. How many games did Walker play? _____
8. How many RBI's did Cruz have? _____
9. How many triples did Luzinski have? _____
10. How many runs did V. Law score? _____

Sox Averages

Batting	G	AB	R	H	2B	3B	HR	RBI	GW
Baines	132	511	60	153	26	8	24	82	16
Walker	122	392	56	116	24	2	23	69	5
Fletcher	134	411	42	106	13	3	3	33	9
V. Law	137	439	56	113	16	2	16	53	4
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Kittle	126	422	62	91	14	0	29	67	3
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Cub Averages

Batting	G	AB	R	H	2B	3B	HR	RBI	GW
Sandberg	144	590	107	185	32	17	19	80	8
Matthews	137	464	94	136	20	3	12	73	16
Dernier	133	497	87	142	24	5	3	32	5
Durham	125	435	81	123	28	2	21	87	14
Moreland	129	452	53	127	16	3	15	76	11
Davis	139	487	54	125	23	2	19	90	6
Cey	134	463	69	110	24	0	25	93	7
Bowa	124	364	29	78	14	2	0	16	1

G = Games Played
AB = At Bats
R = Runs
H = Hits
2B = Doubles
3B = Triples
HR = Home Runs
RBI = Runs Batted In
GW = Game Winning RBI

SOURCE: Chicago Tribune. Sept., 15, 1984

C. DIRECTIONS: Use the charts above to answer the following questions.

1. Did Moreland or Baines have the most triples? _____
2. How many more home runs did Baines have than Davis? _____
3. How many more games did V. Law play than Bowa? _____
4. How many hits did Cey, Bowa, and Cruz have combined? _____
5. How many more games did Dernier play than Kittle? _____
6. How many less at bats did Fletcher have than Cey? _____
7. How many RBI's did Walker and Cey have combined? _____
8. How many less hits did Kittle have than Dernier? _____
9. How many less triples did Luzinski have than Durham? _____
10. How many at bats did Matthews and R. Law have combined? _____

USING TABLES AND CHARTS

Sometimes we have to look for information in tables and charts. Here is a chart from a mail order catalog.

Ready-Made Pleated Shades

Catalog No.	Width Each	Length	Del. Wt.	Each
R736-6560 C	23 in.	64 in.	1.40 lbs.	19.00
R736-6578 C	27 in.	64 in.	1.60 lbs.	19.00
R736-6586 C	29 in.	64 in.	1.70 lbs.	19.00
R736-6594 C	31 in.	64 in.	1.80 lbs.	19.00
R736-6602 C	32 in.	64 in.	1.90 lbs.	19.00
R736-6610 C	35 in.	64 in.	2.10 lbs.	19.00
R736-6628 C	36 in.	64 in.	2.20 lbs.	19.00

A. DIRECTIONS: Use the chart to answer the questions below.

1. If your window width is 29 inches, give the catalog number for the correct shade. _____

2. Suppose you have one 23-inch window and three 27-inch windows.

   a. What is the cost of one 23-inch shade? _____

   b. What is the cost of one 27-inch shade? _____

   c. What is the cost of the 4 shades? _____

   d. "Del. Wt." stands for Delivery Weight. What is the weight of the 23-inch shade? _____

   e. What is the weight of one 27-inch shade? _____

   f. What is the weight of all 4 shades? _____

Here is a chart which tells how many people can be seated in conference rooms.

Holiday Inn—Mart Plaza
350 N. Orleans St., Chicago 60654
836-5000

Conference Rooms	Reception	Banquet	Theatre	School-room	Conference U-Shape	Dimensions
Grand Ballroom	1000	700	1000	500	—	90' x 60'
Bull's Head Hotel	100	50	100	50	32	31' x 22'
Western Stage House	125	70	125	65	40	39' x 22'
Merchants	125	80	125	65	40	39' x 23'
Steamboat	125	80	125	65	40	39' x 23'
Shakespeare	100	50	100	50	32	24' x 30'
Mark Beaubian Board Room	115	70	115	—	42	46' x 18'
5 for 55/95						

B. DIRECTIONS: Use the chart above to answer these questions.

1) If you want to have a wedding reception for 110 people, which rooms might you choose?

_____

_____

2) How many people could attend the conference if you rented the Steamboat Theatre and the Mark Beaubian Board Room?

_____

OBJECTIVE: To do computations involving schedules

PART I

GOING TO THE AIRPORT

Here is a schedule of a neighborhood limousine service to O'Hare.

You should be at the airport about 1 hour before your flight.

In this exercise, always allow at least 1/2 hour before your flight.

NEW SCHEDULE EFFECTIVE SEPTEMBER 15, 1985
NEW EARLY BIRD SERVICE — 4:00 AM DEPARTURE TO O'HARE

Leave BEST ROBERTS MOTEL	Leave IDA NOYES INT'L HOUSE	Leave WINDERMERE DEL PRADO	Leave HILTON	Leave LAKE MEAD	Arrive O'HARE	Leaves O'HARE
4:00 am	4:10 am	4;15 am	4:20 am	4:30 am	5:15 am	5:30 am
5:00 am	5:10 am	5:15 am	5:20 am	5:30 am	6:15 am	6:30 am
6:00 am	6:10 am	6:15 am	6:20 am	6:30 am	7:15 am	7:30 am
7:00 am	7:10 am	7:15 am	7:20 am	7:30 am	8:15 am	8:30 am
8:00 am	8:10 am	8:15 am	8:20 am	8:30 am	9:15 am	9:30 am
9:00 am	9:10 am	9:15 am	9:20 am	9:30 am	10:15 am	10:30 am
10:00 am	10:10 am	10:15 am	10:20 am	10:30 am	11:15 am	11:30 am
11:00 am	11:10 am	11:15 am	11:20 am	11:30 am	12:15 pm	12:30 pm
11:45 am	11:55 am	12:05 pm	12:10 pm	12:20 pm	1:15 pm	1:30 pm
12:30 pm	12:40 pm	12:45 pm	12:50 pm	1:00 pm	1:50 pm	2:15 pm
1:15 pm	1:25 pm	1:30 pm	1:35 pm	1:45 pm	2:45 pm	3:00 pm
2:00 pm	2:10 pm	2:15 pm	2:20 pm	2:30 pm	3:30 pm	3:45 pm
2:45 pm	2:50 pm	3:00 pm	3:05 pm	3:15 pm	4:15 pm	4:30 pm
3:30 pm	3:40 pm	3:45 pm	3:50 pm	4:00 pm	5:15 pm	5:15 pm
4:15 pm	4:25 pm	4:30 pm	4:35 pm	4:45 pm	5:45 pm	6:00 pm
5:00 pm	5:10 pm	5:15 pm	5:20 pm	5:30 pm	6:30 pm	6:45 pm

BOARD AT LEAST TWO HOURS
BEFORE FLIGHT TIME

DIRECTIONS: Use the "early bird" schedule to answer these questions.

A. Leaving town

1) Suppose your plane leaves at 7:16 a.m. You should arrive at O'Hare about 6:16 a.m., but NO LATER than 6:36 a.m.

2) Look in the "Arrive O'Hare" column. What is the latest you can arrive and still catch your plane?_____

3) Suppose the closest stop to you is Roberts Motel. What time will you have to leave there?_____

4) Suppose you just miss the limo at Roberts Motel. Your brother offers to drive you over to the Hilton to catch the limo. What time will it leave there?_____ How long does your brother have to get you there? _____

5) Suppose your plane is going to leave at 2:53 p.m. You should arrive at O'Hare about _____ but NO LATER than _____. If you are leaving from the Windermere, what time should you catch the limo? _____

B. Coming home

1) You are coming back from Los Angeles. The plane is supposed to land at 10:03 a.m. What time will the next limo leave O'Hare?_____ Your friend will pick you up at Ida Noyes. What time should you tell him to be there?_____

2) Your aunt is arriving from Atlanta at 12:32 p.m. You want to meet her at the gate. Then you and she will ride the limo home together. You are leaving from the Del Prado. What time should you catch the limo?_____ What time is the next limo you and your aunt can catch?_____ What time will it arrive at the Del Prado?_____

3) Your plane arrives at 4:15 p.m. What time is the next limo leaving O'Hare?_____ Do you think you can catch that one?_____ If you have to get your baggage and miss that limo, how long will you wait for the next one?_____

PART II

Here is part of a train schedule.

Train No.	Leave Randolph AM	Arrive 18th St. AM	Arrive 23rd St. AM	Arrive 27th St. AM
FM 101	12.50	....	12.57	f 12.58
FM 103	5.15	f 5.22	5.23	f 5.25
FM 105	6.33	f 6.39	6.40	f 6.42
MS 200	6.50	f 6.56	6.57	f 6.59
MS 309	7.15	f 7.21	7.22	f 7.24
MS 121	7.45	f 7.51	7.52	f 7.54
FM 131	7.53	....	....	....
FM 203	8.38	....	8.46	8.47
MS 315	9.00	f 9.06	9.07	f 9.09

f—Flag Stop. Notify trainman or stand in view of engineer.

DIRECTIONS: Look at the train schedule above to answer the questions.

1) How long does it take the FM 101 to get from Randolph to 27th Street?_____

2) How many flag stops are there on this schedule?_____

3) When the schedule shows ... instead of a time, it means **THAT** train doesn't stop there. Does the FM 131 train stop at 18th Street?
_____

4) Suppose you want to go from Randolph Street to 23rd Street. You want to be there by 8 o'clock.

   a) What time is the last train you can catch, and still make it?_____

   b) If you just missed the 7:45, what time is the next train that stops at 23rd Street?_____

   c) How long will you have to wait for it?_____

   d) If you were supposed to be there by 8 o'clock, how late will you be?_____

5) Jack likes to take the 5:15 train at Randolph, get off at 18th Street and have breakfast with his friend, and then get back on the train. He has to be at work at 27th Street by 8 a.m.

   a) What time is the last train he can get at 18th Street?_____

   b) What is the longest he can spend at 18th Street?_____

OBJECTIVE: To measure length

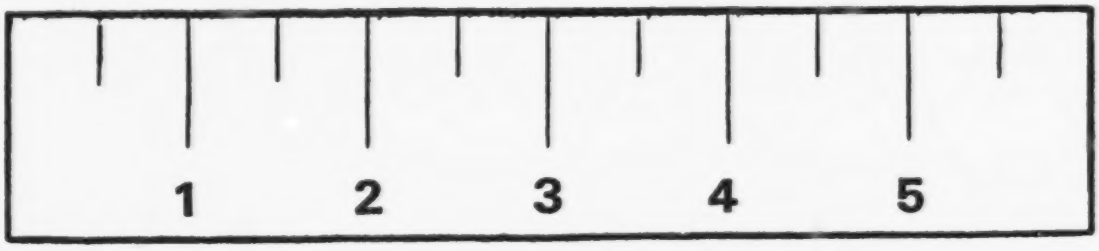
MEASURING LENGTH

A common way of measuring length in the United States is:

for small lengths, like a pencil - - - - - - -inches
for medium lengths, like a person's height - - -feet
for large distances, like between cities - - - miles

To measure lengths you will need a ruler. But first let's see how a ruler is made.

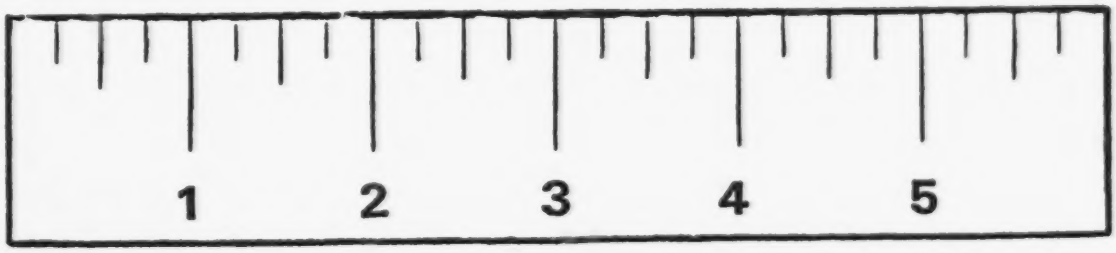
Here is a 6-inch ruler. Each inch has been divided into two halves. The mark between the numbers is at 1/2 inch.



We will count by half inches. You should touch each mark with your pencil point as you name each point. The left end is zero. The right end is 6 inches.

Begin at the left: zero, one half inch, 1 inch, 1 and a half inches, 2 inches, 2 and a half inches,...

Now, suppose each half inch is cut in two. Now there are two parts in each half, four in all. So each new part is 1 out of 4, or 1/4 inch.



Again, we will count: this time by fourths. Touch each mark with your pencil point as you count. You will begin:

zero, one fourth, two fourths, three fourths, one inch, one and one-fourth,...

BEGINNING TO MEASURE

Some marks have two names. Look at the 1/2 inch mark. You could either say one half inch or 2/4 inch.

This means they have equal value, or in measuring, are the same length.

ACTIVITY: Ask your teacher for a ruler marked in fourths of an inch. (If none is available, make a copy of the page before and cut out the bottom ruler. You can measure with a paper ruler.)

Measure to the nearest fourth of an inch. All your answers will either be in whole inches, half inches or fourth inches.

Example: Here is a line that is about 2 3/4 inches. (It is not exactly 2 3/4 inches, but it is closest to that mark.)

A. DIRECTIONS: Write the measures under each line.

1) _____ 2) _____

3) _____ 4) _____

B. DIRECTIONS: Use your ruler to draw lines of these lengths.

1) 3 1/4 inches 2) 1 3/4 inches 3) 2 1/2 inches

MEASURING TO EIGHTHS OF AN INCH

After the inch was divided into fourths, it still was not small enough for measuring some things. So each fourth was divided into 2 parts with another mark. This made 8 parts of the inch in all. So the marks stand for 1/8 inch, or <u>eighths</u> of an inch on this ruler. Here is a picture of it.

When we count by eighths we begin at the left end with 0. Then we touch each mark with a pencil point as we count:

zero, 1 eighth, 2 eighths, 3 eighths, 4 eighths, 5 eighths, 6 eighths, 7 eighths, 1 inch, 1 and one eighth, . . .

Now some marks have 3 names!

1/2 inch = 2/4 inch = 4/8 inch

ONE MORE TIME

The inch gets divided again. Each 1/8 is cut into two pieces. There are now 16 parts to an inch. So each part is called 1/16 inch, or one sixteenth inch.

Here is the ruler, with all the little marks.

Here is how we count by sixteenths: we begin at the left end with 0. Then we touch each mark with a pencil point as we count:

zero, 1 sixteenth, 2 sixteenths, 3 sixteenths, 4 sixteenths, 5 sixteenths, 6 sixteenths, 7 sixteenths, 8 sixteenths, 9 sixteenths, 10 sixteenths, 11 sixteenths, 12 sixteenths, 13 sixteenths, 14 sixteenths, 15 sixteenths, 1 inch, 1 and one sixteenth, . . .

We now see that

1 inch = 2/2 = 4/4 = 8/8 = 16/16

1/2 inch = 2/4 inch = 4/8 inch = 8/16

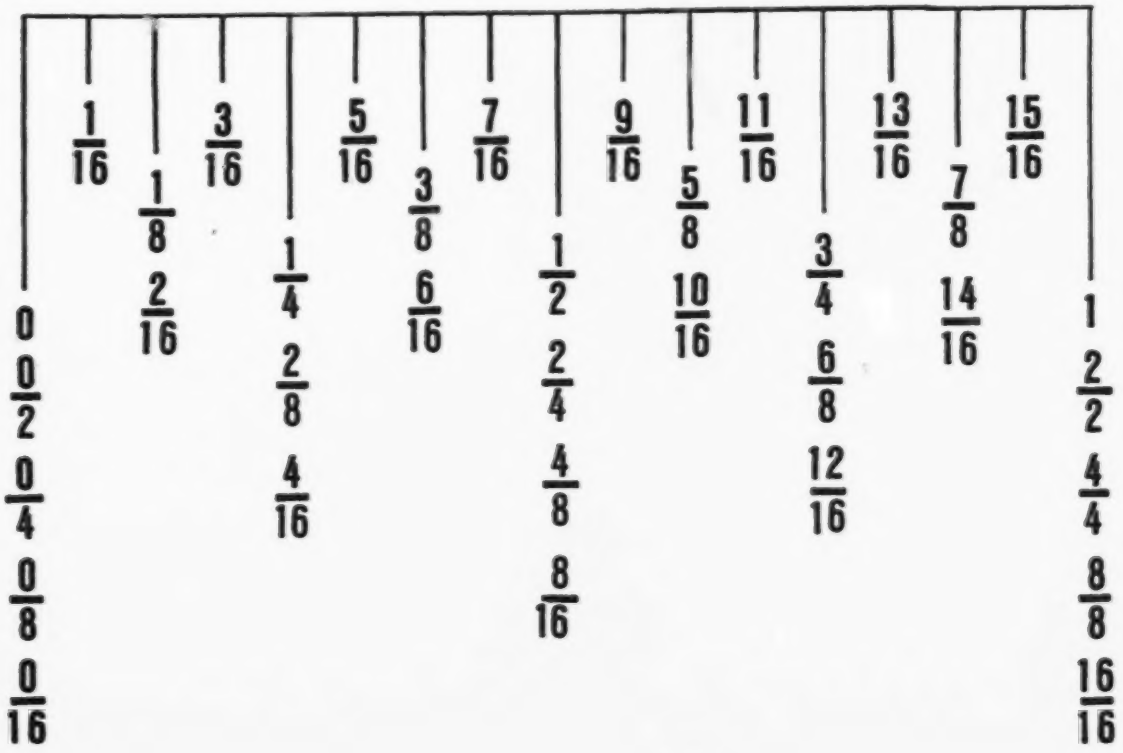
1/4 inch = 2/8 inch = 4/16 inch

1/8 inch = 2/16 inch

A BIG INCH

The ruler is not large enough to write the names of all the marks. That is why we have to learn what they mean. But we can BLOW UP an inch----make it bigger, so we can name all the marks. Then we can look at it whenever we need it.

Here is what an inch would look like under a magnifying glass. But we have named each mark.



MEASURING TO SIXTEENTHS OF AN INCH

You will need a ruler divided into sixteenths of an inch. This is the kind you usually see in stores. (Many of them have centimeters on the other side. We will not use centimeters right now.) You can tell the side you want, because 1 inch is about the length of one section of your finger, between 2 joints.

Most rulers are either 6 inches long, like the ones in this book, or they are 12 inches long. Twelve inches makes a foot, which is about the length of an average adult's foot. In fact, if some people don't have a ruler or measuring tape and want to measure something, they "step it off" with their feet.

If we don't want to write inches we can also write in. or use the symbol " . If we don't want to write feet we can write ft. or ' .

1 inch = 1 in. = 1"

1 foot = 1 ft. = 1'

1' = 12"

To measure to the nearest sixteenth inch, you choose the mark closest to the right length. Then you decide what to name it. If the point is 2 1/16 inch, it is easy.

Suppose the mark has more than one name. Then choose the fraction with the smallest denominator.

Example 1: The 1/2 inch mark can also be called 2/4, 4/8, or 8/16. All of these are correct, but we usually say 1/2 inch.

Example 2: The line we are measuring ends up at 10/16. It can also be called 5/8. So we usually say 5/8.

C. DIRECTIONS: Measure the lines, and the sides of these figures, to the nearest sixteenth of an inch. Then label them. Use one of the symbols for inches. The first two have been done.

1.

1 9/16"

2.

2 1/4"

3.

4.

5.

6.

7.

8.

D. DIRECTIONS: Draw the lines to the nearest sixteenth of an inch. Then label them. Use one of the symbols for inches.

1. 1 1/2 inches
2. 2 3/4"
3. 1 5/8 in.
4. 7/16 in.
5. 3 1/4 inches
6. 1 5/16 in.
7. 2 1/8 in.
8. 1/2 in.

DRAW LINES HERE. LABEL EACH